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ORIGINAL ARTICLES.

ADDRESS OF THE CHAIRMAN OF THE SECTIO N ON SURGERY AND ANATOMY—READ TO THE MEETING OF THE AMERICAN MEDI- CAL ASSOGIATION, JUNE, 1883.

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In performing the duties of Chairman of the Surgical Section, it is not deemed practicable to encompass all that the organic law of the Association may contemplate. For, in reporting upon the progress made in surgical science, it is recognized that many theories are, at present, announced as facts, which, when experience and demonstration shall have thoroughly tested them, may be eliminated, to perhaps reappear when the cycle of professional experience again completes its revolution.

The greatest progress has been made in operative surgery, although other departments have been constantly receiving new light and attaining results that add to our already extensive accumulations. It is not claimed that large numbers of new operations have been originated and performed, but it is evident, that the better understanding of pathological conditions, has stimulated surgeons to establish a standard for operations hitherto ventured upon in rare and extreme instances only.

In pathology the microscopist has been active in trying to define and locate the germ cause of disease.

Since Cohnheim gave to the profession, in a complete and formulated manner, the character and importance of the colorless corpuscle in pathological changes, strenuous efforts have been put forth by Pasteur, Koch and others to unfold the importance of the bacterian germ which, according to the demonstrations of Oliver, Richet and Mitrophanow, have a normal existence in the blood, lymph and tissues of the body.

Burdon-Sanderson, Chauveau, Watson, Cheyne, Billroth and many others have adduced much information which certainly can not do otherwise than benefit, even though a great modification of the bacterian theory is made necessary.

Certain it is that during the year, there has been developed a strong feeling in favor of Koch's views concerning the bacilli and their alleged tubercular relations. That these peculiar micro-germs exist there can be no longer any doubt.

But whether they are the cause of the tubercle, or whether the tubercle develops *them*, the profession has not made sufficient progress as yet to justify an unequivocal statement.

In Austria there is, existing under the leadership of Koch, a strong belief in favor of the bacilli being the cause of the deposit; while in Prussia, Spina leads the opinion that the bacilli are produced by the tubercle or the associated conditions which originate the tubercular matter.

If the following statement of Spina be true, then there is much uncertainty surrounding the whole theory of bacilli being the cause of tubercle.

"I have examined about 150 mensenteric and omental tubercles in the most various stages of their development according to Koch's and Ehrlich's method, and found bacilli in *not one* case."

The surgeon is much interested in these investigations, because of the important statements made by eminent teachers concerning the origin and nature of some forms of articular disease, also the peculiar degeneration which takes place in bone and glandular structures. The interest does not stop with these tissues; for underneath it all the "germ theory," which is thought by many excellent men to be the greatest of all causes in engendering infections, inflammations, pyæmia, septicæmia, abscess, gangrene, etc., receives a support which, if conceded, will tend to give new and more efficient reasons for the use of antisepticism in practice. Now that so many able and relentless workers are seeking information, which promises greater accuracy, it may be well not to claim too much for remedies which are given with the expectation that they shall ultimately reach the habitation of the noxious germ, and there hold mortal combat and win a victory for further life in tissue which is threatened with decay and death.

It cannot be admitted that practical surgery has thus far been directly benefited by Koch's views.

The condition of the problem of the management of wounds and other pathological processes by means of the so-called antiseptic methods, suggests a move in the direction of greater confidence in the details of operative procedure and scrutinizing attention in extreme cleanliness in the minutæ of practice.

It is difficult, in fact, impossible, to state with precision the exact deviation in the direction of, for or against the treatment of wounds by the different chemical agents during the past year. With many the custom is to believe that antiseptic practice in

surgery means the application of *carbolic acid* in some form of attenuation to the cut or exposed suppurating surface.

Different surgeons have used different substances, but according to the experiments of Dr. A. T. Cabot, of Boston, upon detached dead tissue, it was found that carbolic acid acted more promptly than any other agent in arresting putrefaction and destroying micro-organisms connected with the changes of decomposition.

Within the year the antiseptic methods of wound manipulation have been regarded as embracing the spray, fixed and intimate relations of fresh surfaces, rest, pure air surroundings, and, when practicable, drainage.

It was stated by Thornton that the principal danger which surrounded the opening of the abdomen was from the action of the vicious bacteria. And Spencer Wells' unprecedented(?) experience in ovariotomy is referred to by Marcy as furnishing almost incontrovertible evidence in favor of the antiseptic practice.

In this connection the experience of Mr. Lawson Tait, where he reports 100 successful ovariotomies with but three deaths (none of the antiseptic precautions having been regarded), should also be remembered by those who can only see progress and success in treating wounds on the anti-germ plan.

Certainly the new experience of Billroth and Esmarch is commendable, and should be gratifying to those eminent operators. But it cannot be successfully argued that the lessened mortality was alone due to the use of antisepticism, as practiced by Lister. It will be immediately asked, how else can these alleged great changes in practice be explained?

If everything that is used to keep a wound clean, and to ensure thorough drainage, is called antiseptic practice, then no adequate explanation can be offered.

Is not the experience of Mr. Keith as wonderful as the tabulations of the Vienna and Keil surgeons?

The experience of the English surgeons, on duty with the British troops in Africa during the Zulu and Transvaal wars, was such that the antiseptic management of wounds was commented upon with but little favor after the records of those campaigns were finally submitted.

The rather short campaign in Egypt was characterized by great dissatisfaction in the beginning of the war. But after the surgical management had become thoroughly organized and freed from abuses, observations were made by good men who had only good reports to make of the antiseptic practice, which was very generally employed.

While it is admitted that most of the leading surgeons of England are thoroughly wedded to the practice of antiseptic treatment of wounds, there are to be found not a few excellent teachers and operators, who most reverently believe that nature, under wise assistance from the surgeon, will do more to save limb and life than the surgeon can do, who depends upon restricted antisepticism. The writer has opened the abdomen, in all, forty-eight times. In forty-six instances for the removal of ovarian growths, once for an adherent ovary and once for an intestinal obstruction. In the first fifteen cases there were six deaths. The operations were made under the spray and the wounds were treated with a carbolic acid solution. In the remaining thirty-one ovarian operations, also in the oöphorectomy, and in the case of laparotomy, the spray was not employed. The last two mentioned cases recovered, and out of the ovariotomies there were four deaths. Has it occurred to those who are strong in their advocacy of the antiseptic treatment of wounds that in the United States there are in active practice among the 52,000,000 of inhabitants, about 86,000 medical men, a very large number of whom are treating wounds and pathological lesions? Also that many of the wonderful results accomplished by these numerous surgeons are wrought, not by means of the spray and carbolic acid, but by the extraordinary care and attention which are given their cases.

Those who write for the periodicals and report results in practice are very few, unfortunately. The major operations are being performed in many apparently out-of-the way places, and results are being achieved which would receive the encomiums of the renowned in our ranks, did they but know where, and upon whom, to bestow them. It is apparent that the "lost art" of blood-letting, in the treatment of inflammation, is being reclaimed, and its induction to a legitimate position among other remedies of conceded value is fast taking place.

Besides reasons derived from clinical experience, Dr. Nancrede, of Philadelphia, has observed and demonstrated that an accumulation of the oxygen-carriers in the beginning of inflammation overloads the parts with *oxygen*, which stimulates unusual amœboid action of the colorless corpuscles, thus favoring cell migration. The lymph spaces, through which excessive accumulations of liquor sanguinis is directly returned to the blood, become blocked, and as a result cell proliferation and stasis takes place. Cell nutrition is prevented. Direct withdrawal of blood, when performed sufficiently early, unstops the lymph spaces, unloads the oxygen, and re-establishes a circulation, which can carry on physiological nutrition.

Among the many new and important instruments which have been presented may be mentioned the universal or compound racket joint which has been offered by Dr. Stillman, and which can be adjusted at pleasure, and permitting of universal motion. Perhaps one of the most important steps that has been taken, is the utilization of the electric light, both as a means of diagnosis and as an aid in making operations in cavities and places where natural light can be used with uncertain effect.

The instruments invented by Leiter, of Vienna, and Dr. Nitzel, of Dresden, some of which have been well described by Dr. Roswell Park, are well calculated to assist in causing much progress in the next decade.

Dr. Thomas Oliver opened an abscess of the liver, and then placed the electric light within the cavity, thus defining with great certainty and satisfaction the size of the cavity and the thinness of the abscess wall, on which he states he saw "a greyish red condition of the wall of the cyst, studded across which

were numerous yellow-white spots, evidently pus. A slight oozing or sweating was also noticed on the wall of this cavity." For the attainment of this remarkable achievement he employed Swain's lamp, which in size is no larger than an ordinary bean. The interior of the bladder, pharynx, larynx, œsophagus, stomach, and ear have been illuminated, thus suggesting the possibilities in waiting for experimental art.

Prof. Graham Bell has repeated his experiments with the induction balance, and has made decided progress in *locating* metallic substances in the tissues of the body. Not only has he utilized the electric current to *locate* the *lead*, but he has demonstrated the possibility of determining the distance of the substance from the surface.

His reports are very interesting, and for a full description of his ingenious instruments they must be examined.

In the direction of exploration and diagnosis of intra-vesical pathology, Sir Henry Thompson has offered some very valuable information. He makes a "limited incision" in the membranous portion of the urethra, and with the index finger passes along the track of the separated urethra to and through the neck into the bladder, where, by the aid of supra-pubic pressure, a free and satisfactory exploration of the cavity and walls is permitted.

This method he has employed in thirteen cases, and has removed five tumors, the location and nature of which could not have been so well determined in any other manner. He also reports a case in a female, where he, by dilating the urethra, succeeded in diagnosing and removing a polypoid growth.

The year has greatly added to our previous meagre knowledge of surgical procedure in intra-abdominal pathology.

The statistics furnished, by reason of abdominal sections, are becoming increasingly valuable, because they show that less hazard is encountered in attempting to extirpate tumors, malignant growths, and in removing the causes of intestinal obstructions than was formerly supposed. The operation for removing a portion of the stomach or its duodenal connection may be said to have been legitimized by the experience, much of which has been furnished by the surgeons of continental Europe, since our last session.

It is not intended to convey the meaning that gastrotomy is an operation of very recent origin, but rather to state that the feasibility of its commendable performance has been mainly proven by the experience collected during the interregnum of the Association.

Dr. Troquart states that there have been performed in all, since 1879, so far as public announcement has been made, twenty-nine pylorectomies and gastrotomies, thirteen of the operations having been made before January, 1882, and during that year.

Up to January, 1883, there have been performed seven additional operations, making in all thirty-six operations for the removal of some portion of the stomach or duodenum for cancer, gastric ulcers, inflammation and destruction of colon.

Three of the operations were for ulcers, and the remaining thirty-three were supposed malignant deposits.

From the information within reach, there were four recoveries, all of the remaining cases dying within ten days, except one case (Billroth's), which died at four months. Unless the greatest discretion is shown in the selection of cases for operation, the mortality can not be otherwise than very high.

No less an authority than Billroth states that not more than one case out of fifty is suitable for operative interference. Evidently his opinion has a good retrospective support, when the statistics of Gussenbauer and Van Winiwarter are considered. They state that after having examined 903 cases of cancer of the stomach in the Pathological Institute in Vienna, that there were 542 cancers of the pylorus, 370 of which had adhesions of greater or less extent to the contiguous organs.

Thus far the majority of the operators prefer to reach the pylorus by making an incision in the median line. There are two very important questions to be answered in connection with this operation.

First. If the cancer, for which nearly all the operations are performed, is due to a general cause, can the surgeon expect the patient to receive other than temporary relief from the operation?

Second. Will the aggregate life in those cases, when the operation is successful, be greater than it would be in those cases who die as a direct result of the operation?

The history of recurrence of cancer of the stomach is yet to be studied in its relation to removal by operation. But it is hoped, that a justification of the operation will only be based upon an experience that the average pathological life is longer with the operation than without it.

Laparotomy is an operation which is progressing with much favor in America and France. Since ovariotomy, with its many complications and risks, is becoming rather common, the opening of the abdomen to relieve intestinal obstruction, the result of temporary misplacement of the bowel, or from the abnormal location of the products of inflammation, is not only inviting, but operators, who have had experience in making ventral sections, proceed with less hesitation to search within the abdomen for arrested alimentary action.

As experience increases it will no doubt be shown that the tissues involving the cœcum and its contiguous relations are much oftener the seat of morbid changes, resulting in unabsorbed deposits, than is ordinarily supposed. In fact the lymph exudation and fibrinous adhesions—the result, perhaps, of an unrecognized local inflammation—may serve, in an indirect manner, to not only impair nutrition but directly imperil the life of the organ and possibly that of the body.

The physician explains that the costal and pulmonic surfaces of the pleura may be adhered to each other and, in this way, unfavorably affect the functions of respiration. The same statement may be occasionally given of an allied pathological condition existing within the abdominal cavity, and particularly near the ilio-cœcal region.

The following cases have an important bearing upon the foregoing allusions:

Ole Johnson, male, æt. 24, single, Norwegian, country merchant. He resided on a farm until 1874, since which time he has been occupied in a general store. His physique was slight, and general health only fair. In 1869 he had an attack of typhoid fever, but recovered with about the same average health. On May 24, 1882, he complained of feeling unwell, experiencing slight pains in the abdomen, with a sensation of nausea.

In the morning of the same day there occurred a profuse spontaneous action from the bowels. On the early morning of May 31 the pain sent him from his bed at 4 o'clock. He walked the floor, occasionally vomiting, but could not obtain relief by taking "hot drops" and brandy, domestic remedies which were near at hand. So at 8 A.M. Dr. Fitzgerald, of Grand Mound, was called, and observed anxious countenance, more or less pain, though not severe, temperature 99 deg., pulse 100 and rather weak, frequent efforts at vomiting, which act occasionally succeeded in producing a ropy mucus. He gave a hypodermic injection of morphine, which relieved the pain for a short time, and influenced a kind of restless sleep for only one hour, when the same treatment was resorted to again. Efforts were made to evacuate the bowels by injections, but without success. A long tube extending to the transverse colon was used, but the fluid did not bring away fecal matter. Cathartic medicines were moderately administered, but no movement could be obtained. On May 29 the patient's symptoms continued much the same, there being pain in hypogastrium, with slight tympanitis, pulse 110, soft and rather weak; stomach restive, with occasional efforts at vomiting, countenance and surface indicating decided nervous depression. Temperature not taken. Nothing passed the bowels.

Morphine continued as before. May 30 condition unchanged, except that systemic depression was becoming still more marked. On May 31 the patient showed decided prostration; eyes lusterless and of slow movement, stomach restless and occasional hiccoughing, pulse 120 and weak, temperature 100 deg., respiration 24, abdomen slightly tympanitic, but *not* particularly sensitive upon pressure; bowels unmoved.

Consultation recommended opening the abdomen to ascertain the cause of the obstruction, with a further view of dislodging it if possible. Accordingly at 6 P.M., by means of kerosene light, the operation was made by making an incision in the median line, from one inch below the umbilicus to within one inch of the pubis, and thus entering the abdomen. A considerable portion of the colon and small intestines were removed, when nothing unnatural was found. I passed my right hand down to the region of the right iliac fossa, where I found a portion of the ileum imprisoned, and not at all tractable. Upon more close and minute inspection I discovered that the appendix vermiformis had, at its cœcal extremity, become adhered, and was very firmly attached to the fascia and tissues covering the last lumbar vertebra on its right lateral body. A portion of the ileum had passed under this adherent appendix and ascended on both sides, so that the vermiformis acted as a *stricture*, preventing the passage of the contents of the bowels. The peritoneum and peritoneal surface of the ileum gave but little evidence of inflammation. The appendix could not be separated from its vertebral location without running a risk of making more or less of a lacerated surface of the adherent tissues, so I with common silk passed two ligatures around the appendix, one each side of the centre, and then divided it. From the free ends I expressed in amount from ten to twenty drops of soft pultaceous material, after which the parts were carefully sponged and the intestines and abdominal cavity well cleaned, and the opposing surfaces of the wound were brought together with great difficulty, on account of the lateral retraction of the thin tissues.

The parts were maintained in position by means of silver wire sutures, the abdominal walls being too short for the use of ovariotomy pins and superficial sutures of silk. Over the wound was placed absorbent cotton and a bandage. The subsequent treatment consisted of milk and undisturbed dressings. The pain required but little morphine. The bowels moved spontaneously in 73 hours after the operation. Sutures removed in twelve days, and on the 20th of June he rode 12 miles in a buggy, considering himself *well*. The patient's health has been much better since the operation than it ever was before, and he has gained largely in flesh, weighing 120 pounds before operation, now weighs 135 pounds, and looks florid and healthy. The appendix must have been thus abnormally placed in childhood, or maybe when he had typhoid fever.

Still further illustrative of progressive abdominal surgery may be cited a case similar to the above, being operated upon and published by Leon LeFort, of France:

In June, 1882, he was called to see a young man 18 years of age, who in the evening of May 25, 1882, was seized in the abdomen with severe pain, and about midnight the pain became more like colic, for which Dr. Tachard gave laudanum and belladonna, together with the application of hot poultices, some relief therefrom being received. The succeeding day (May 26), the pain increased, and accompanying it there was special sensitiveness of the abdomen, also some tympanitis. Castor oil was given but was immediately vomited, no evacuation of the bowels could be encouraged, but vomiting and retching became incessant.

There existed a small left inguinal hernia, which played no part, however, in the case; it being returnable at pleasure and without difficulty. It also appeared that three years before there existed peritoneal inflammation. No relief being received from the different kinds of treatment employed, and on June 1 decided typhoid symptoms—such as are seen immediately preceding dissolution—appearing, an incision about fifteen centimeters in length was made from just above the pubis to near the umbilicus. The intestines bubbled out and were carefully examined, coil by coil, and then returned. Upon meeting with slight resistance when making traction upon a portion of the ileum, the hand was passed along the bowel to

the right iliac region, where he found a constricting ring or band of fibrous tissue, which was thick, formed of organized adhesions and encircling the small intestines for a distance of five centimeters from the cœcum. The width of the band was five millimeters. The constriction was divided by means of scissors and the intestines liberated. There were some evidences of congestion, but no decided inflammation, the life of the tissues not having been compromised.

The parts were thoroughly cleansed and returned, and seven deep silver wire sutures were passed through the tissues and fastened on the opposite side by a bougie. Superficial sutures were employed to coapt the surface edges. In the night of June 1 the patient had a spontaneous evacuation from the bowels.

On the seventh day the patient subjected the abdomen to undue exertion, when the superficial sutures gave way; they were replaced, and thereafter uninterrupted recovery followed. On July 1 he was well. General management of the operation was unantiseptic. Health seven months after operation much better than previous health, also loss of inguinal hernia.

Prof. Pietro Loreta, of Bologna, has performed a new operation upon the stomach for stenosis of the pylorus—a result of unmalignant ulcerative inflammation. The operation has in view the stretching of the constricted portion by the fingers. The number of operations thus far performed are four, with two recoveries. The steps of the operation, as reported by Dr. Harris, are to reach the stomach, and then, mid-way between its two curvatures, make an incision through the wall, beginning one and one-fourth inches from the pylorus, extending two and three-eighths inches toward the cardiac end. The index finger of one hand is then introduced within the cavity and carried within the stricture. The corresponding finger of the other hand follows the finger already introduced and is caused to pass through the orifice, the dorsal surface of each finger being in opposition; the stricture is then stretched. The serous surfaces of the stomach are then united by continuous sutures, thus slightly inverting towards the cavity the edges of the wound.

We understand that such an adaptation of the wound precludes the possible escape of the contents of the stomach. It will be at once conceded that a critical study of the history of any given case must result in an unequivocal diagnosis, which, when made, may finally necessitate a pylorectomy for carcinomatous deposit.

Future reports of this operation will be looked for with great interest. While your attention is upon the operative part of abdominal surgery, I wish to ask you to consider at least one of the causes of fatality. It sometimes happens that when no satisfactory clinical reason exists for an untoward result, the patient unexpectedly and rather suddenly dies. Not a few explanations, such as shock, acute septicæmia, etc., have been offered, but I feel assured that neither the direct nor ultimate cause is always found in these assumptions. The following case is both interesting and illustrative: B. J., æt. 19, single, native of Iowa. In 1880 there began to develop in the right iliac fossa a tumor, which, in the early part of January, 1883, I diagnosed as being a multi-locular ovarian cyst. On February 23 I operated in the usual manner and removed a multi-cyst, weighing, approximately, twenty-five pounds. Each vessel of the broad pedicle was separately tied and the membraneous surfaces brought together and sewed over the vessels thus secured. The abdominal cavity and external wound treated in the customary manner. She recovered well from the depression of the operation. The temperature was 99, pulse 102; she complained of wanting more air, desiring the windows raised. At 7:30 P.M., pulse 102, temperature 100½ degrees. Same feeling about insufficiency of air, and spasmodic breathing unabated; 10 P.M., pulse 106 and full, temperature 101 degrees.

Quite restless, and wanted something done for her breathing, although the windows were well open. Some tenderness in left iliac. Aq. ext. opi. suppository 1 gr. given.

February 24—Restless night, symptoms of difficult breathing continued. 7 A.M., pulse 124, weak; temperature 103½°. 12 M., pulse 140, weak and small; temperature 103 1-5°. 4 P.M., pulse 140, weak and small; temperature 102½°. Died at 5 A.M., February 25.

Throughout the case unrelenting efforts were exercised to maintain the strength by both oral and rectal alimentation.

Post-mortem examination made nine hours after death. The seat of operation was found in a perfectly satisfactory condition—no foreign material of any kind was discovered inside of the abdominal cavity. All of the organs were healthy, with one exception, viz., in the right ventricle of the heart there was a large, white fibrinous (ante-mortem) clot. The question raised by this case may be the means of introducing an interesting subject for discussion in the Section. What was the cause of the blood clot? What influence permitted the separation of the fibrine from the other constituents of the blood?

The kidneys were not examined before the operation. Had they been interrogated, and had albumen or casts been found, I do not feel inclined to admit that such discoveries would have necessarily deterred me from making the operation. At present the attention of the profession is being particularly called to the kidneys in relation to operative surgery, and doubtless there is ample room for a profitable interchange of opinions and experience.

To what extent defective organic action, associated with anæsthesia, is due to the insufficient vitality of the blood, careful future observation only can determine. It is not enough to say that, in any given case, death occurred as a result of fibrine collection on and around one or more of the heart valves.

There must be a further cause which influences the dyscrasial condition of the blood. Some very interesting observations have been made by M. Segond, concerning the blood-vessels, blood supply and nutrition in limbs upon which amputations have been performed. His statements are somewhat at variance with the opinion hitherto recognized as conceded, since his demonstrations have shown that the diminu-

tion in the size of vessels does not cease when they reach the first important division, but go on decreasing in size and calibre in the entire limb and *beyond* toward the primal distribution. Coincident with this atrophic change all of the tissues, including nerves, bone and lymphatic glands decrease in size and weight, and correspondingly there is lessened function. It was also shown by M. Poncet that in a case of amputation of the leg the femoral artery was, within a peperiod of ten days, markedly diminished in size. It was not, however, observed that the walls of the vessels showed any shrinkage. Whether or not these important changes have their beginning in the blood, heart or cerebrum, remains to be determined.

Dr. David Newman, of Glasgow, has performed the operation of nephoraphy, it being the first operation made in England, upon a woman for floating kidney. The renal capsule was stitched to the margins of the incision, and deep button sutures were passed through the kidney substance, thus fixing the organ in its natural position. The patient recovered and is now well.

Dr. William Thompson, of Dublin, has added another case of ligature of the innominate artery, the patient living 42 days.

It will be observed that but three of the recorded cases (Grafe's and Cooper's), including Smith's, which recovered, lived longer than Thompson's.

Dr. Arthur E. Baker, of London, has proposed and practiced a novel and apparently successful operation for varicocele.

After washing the scrotum thoroughly he separates the veins of the cord from the vas deferens, and then passes a needle threaded with twisted silk behind the veins, after which the veins are permitted to drop back, when the needle is returned in front of the veins, which are thus secured in the loop of the ligature, through the original opening. The thread is then made tense and the veins are brought close to the wall of the scrotum, and the ligature is well tied, cut close to the knot, and then allowed to return with the veins to the scrotal cavity.

This operation differs from a similar operation recommended by Dr. Gross in two particulars. First, the ligature is silk and carbolized. Second, the strangulation of the veins is exclusively intra-scrotal. The results reported are such as to commend a further trial of the operation.

Two interesting and remarkable operations have been made upon the sternum and its contiguous relations by Dr. Keuster, of Berlin, and Prof. Köenig, of Gottingen.

Prof. Köenig's case was one of sarcomatous growth of the sternum, a considerable portion of which had to be removed. In the operation it was found that the sarcoma had become adhered, more or less, to the post-sternal tissues, including the pericardium. In the exercise of the necessary force in separating the adhesions and inter-communicating tissues, both pleural sacs, also the cavity of the pericardium were freely opened. The wound was dressed antiseptically. On the twelfth day it was discovered that one of the flaps had become gangrenous, and underneath, the process of suppuration was going on; so much so that the imprisoned matter was forced within the pericardium, thus freely surrounding the heart. The patient made slow progress, but recovery finally occurred.

Dr. Kuester's case was one of supposed sarcoma. The patient was forty years old, and had a tumor about the size of a goose-egg, situated at the sternal ends of the cartilages continuous with the third and fourth ribs. The tumor was rather elastic but not movable. It passed between the cartilages, and seemed to have an undefined distribution within the thorax. Gumma and aneurism were both eliminated. The operative procedure, made Oct. 27, 1882, consisted in dissecting the skin and cellular tissue from the tumor; commencing the incision on its inferior margin. The next step was in dividing the third and fourth cartilages and chiseling away one-half of the breadth of the sternum. Thus removing the sternum and rib connections, the tumor was discovered to have a prolongation extending well down into the anterior mediastinum, where there was seemingly a basic attachment. In the effort at separation of the tumor from the deeper tissues, the right pleura was opened and the internal mammary artery was divided.

The artery could not be reached for a time, so the hæmorrhage was arrested by acupressure. It is also stated that when the cavity of the pleura was invaded the lung collapsed. The patient recovered rapidly from the results of the operation, and no doubt will recover ultimately from his syphilitic pathology.

These cases are illustrative of bold and scientific manipulation, and at the same time they indicate how nearly a dexterously handled knife and finger may reach the vital organs of circulation and respiration without compromising life. We will not discuss whether either of the operations were absolutely necessary, but content ourselves that progressive surgery is demonstrated in their performance.

Important additions have been made to our surgical literature in monographs, revised editions of some of the leading text books, and, in America, the profession may be congratulated upon the appearance of two important volumes—one in surgery and one in anatomy.

Under the supervision of the Surgeon General's office, the late surgeon, George A. Otis, began the surgical history of the Rebellion.

He lived to render his name long famous by completing the second part and beginning the third part of volume second, of this great and incomparable history. While Dr. Otis' untimely death was a great loss to surgical science, the head of the army surgical department exhibited excellent taste and manifested wise judgment in appointing Surgeon D. L. Huntington to continue and finish this great work. The duty has been well performed, and the world is now in possession of the most complete record of wounds and injuries resulting from war and battle that has ever been produced.

A few references cannot but be interesting to both army and civil surgeons. The whole number of wounds reported were 253,142, and out of this number there were 89,528 connected with the lower extremities; 59,376 being flesh wounds, 674 being

classed as incised or punctured wounds. The 30,152 were gun-shot fractures, and specially located as follows:

Femur, including complications of hip-joint	7,776
Fractures of tibia and fibula (shafts), single or double	10,026
" complicating knee-joint	3,557
" involving tarsus, metatarsus, and phalanges	8,793
Total number	30,152

The relation which 89,528 sustains to the whole number shows that 35.3 per cent. were wounds of the lower extremities, an experience comparing very closely with the percentages furnished by surgical reports of wars and campaigns in other countries. It is shown that in 3.4 per cent. of the cases both lower limbs were injured. The left in 53.1, and the right in 43.5.

The collected number of amputations at the hip-joint were 66, the recoveries being 11, thus furnishing a mortality of 83.3 per cent. Of the 25 primary amputations there were 3 recoveries. Intermediary amputations, there were 23 cases and no recoveries; secondary amputations, there were 9 cases and 2 recoveries, and of the re-amputations, 9 cases with 6 recoveries. There were 33 cases of primary excision of the hip-joint with but one recovery, and of the secondary excisions of the hip-joint there were, in all, 11 cases with 3 recoveries. It is stated that about 60.6 per cent. of the cases of gun-shot injuries of the knee-joint complicating bone were fatal. One-fourth of the whole number were not treated by operative interference.

Dr. Harrison Allen, of Philadelphia, has produced a part of what promises to be an excellent treatise on human anatomy, including medical and surgical relations. Already there has appeared four parts, the fifth and sixth parts to be ready for distribution by October 1.

A real and most substantial advance is being made in surgery in connection with railway corporations. Many of the leading lines have introduced into their system of management surgical departments, the object of which is two-fold: First. It enables the company to more economically manage its financial affairs. Second. It ensures to those who may be unfortunate enough to receive injuries, the certainty of receiving the most complete surgical skill. The ultimate benefits which are certain to accrue to the profession are the accumulation of a vast amount of statistical information which will be of great service in neural pathology. Because it is a well known fact that many cases, the result of alleged railway accidents are finally subjected to judicial proceedings, when the statements of the plaintiff are too often believed by the jury, when the allegations are not sustained by the systematic expressions of injured tissues and organs.

The instances are exceedingly rare where real pathology, the result of accident, does not fail to receive corresponding endorsement by the surgeon. On the other hand, the surgeon often finds himself unable to satisfactorily interpret the unharmonious descriptions of symptoms furnished by the person who sees a monied equivalent at the end of a well established "concussion" (?) of the brain or spinal cord. After the rendering of a judgment, and the payment by the defense of assessed damages, the most marvelous and previously stated permanent disabilities recover under questionable circumstances.

The retransformation of fat cell into normal glandular structure (!), the rapid change of atrophied and wasted nerve filament into normal tissue (!!) occurs with inconsistent rapidity, and the teachings of histologists and pathologists are abrogated and special therapeutics, of miraculous origin, receive praise and credit which can but cause science to blush.

The surgical bureaus of these corporations will, by their collected experience and tabulations, be qualified so as to be able to furnish much valuable information to both judicial and popular tribunals. Then justice to pathology and rewards to individuals will receive fairer and more honorable administration.

THE REALITY, MECHANISM, AND DIAGNOSTIC SIGNIFICANCE OF DIMINUTION OF RETARDATION OF THE PULSE IN AORTIC INSUFFICIENCY.

BY A. T. KEYT, M.D.

[Read to the Section on Practice of Medicine and Physiology.]

Dr. Hendérson[1], in 1832, first emitted the idea that the interval between the heart's impulse and the arterial pulse is prolonged in aortic insufficiency. Since him others, and among them the principal authorities on diseases of the heart, have accepted the view. Flint says "that it characterizes certain cases in which the regurgitation is excessive, is not to be denied[2]." Walshe writes: "This retardation may, with care, be detected in many, but unquestionably not in all, cases of that disease. Possibly, where no morbid retardation can be discovered, the failure may depend not on its absence, but on its being carried to such extremes that the arterial pulse produced by one cardiac systole is nearly synchronous with the next[3]." As late as 1877, M. Tripier, in a publication[4], advocated the reality of this exaggerated delay of the pulse in aortic insufficiency.

The observation appeared incontestable. The hand perceived the shock of the heart, and the finger the radial pulse, the interval between the events being noted as much longer than in health. And the explanation of the accepted phenomenon came with show of reason, through the reverse arterial current and lowered arterial blood-pressure (classical) of free aortic regurgitation. The view of an abnormal delay of the pulse, thus supported by observation, reason, and authority, seemed an established fact in the clinical history of this lesion.

Nevertheless the idea is wholly erroneous, and the pulse, so far from being unduly retarded on the systole of the ventricle, is really greatly precipitated on that event in large aortic insufficiency. Correction of the prevailing error, and demonstration of the true chronometric relationship between the heart and pulse, is due to the graphic method. Traces of the heart and an artery taken simultaneously, show neatly

[1] *Edinburgh Medical and Surgical Journal*, Vol. xxvii, 1832.
[2] Flint's Diseases of the Heart, 1859, page 141.
[3] Practical Treatise on Diseases of the Heart and Great Vessels. American edition, 1862; page 72.
[4] *Revue Mensuelle*, t. per, p. 19.

the beginning of cardiac systole and the beginning of the arterial pulse, and the space separating these beginnings marks definitely the interval between the events. Thus the normal interval between the heart and different arteries being ascertained, the modification of the interval by disease is readily noted.

In this manner Francois-Franck experimented on patients affected with aortic insufficiency, and first

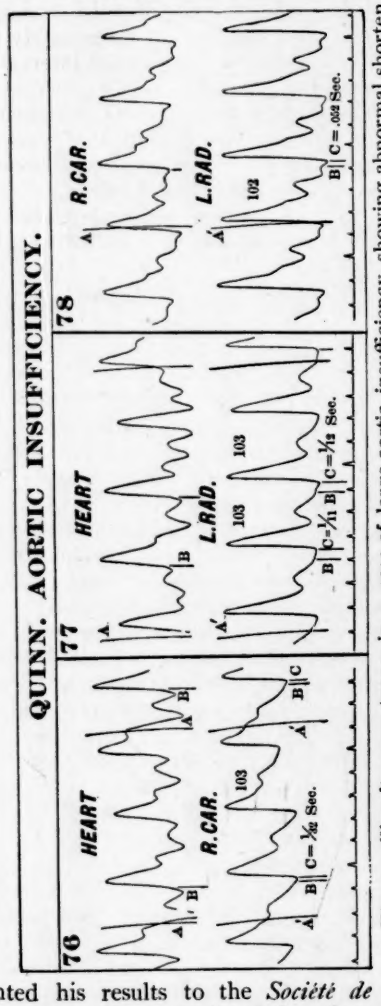

Fig. 1.—Simultaneous traces in a case of large aortic insufficiency, showing abnormal shortening of the cardio-carotid and cardio-radial intervals.

presented his results to the *Société de Biologie* in March, 1878. He formulated thus the conclusion of his researches: "*In large, pure aortic insufficiency the retardation of the pulse on the beginning of the systole of the heart is very notably diminished.*" Cotemporaneously with Franck I also was studying, independently, by means of the simultaneous graphic method, the influence of different forms of valvular disease on retardation of the pulse. I had demonstrated that the pulse is abnormally delayed in mitral insufficiency, and reflecting as to whether this delay might be contravened by any concomitant condition, I arrived at a conclusion which was afterwards published in the following words: "Nevertheless, the phenomenon, though constant in pure mitral incompetency, will probably be found wanting in cases of this lesion complicated with an open state of the aortic valves; for in the latter condition the base of the arterial column rests against the sides of the ventricle, instead of against the aortic valves, and is advanced with the first movement of ventricular contraction, thus insuring a short interval between cardiac systole and arterial expansion. * * * The idea that aortic insufficiency produces delay of the pulse is certainly erroneous[1]."

In March, 1880, opportunity presented for tracing a case of undoubted aortic insufficiency. The result is shown in figure 1[2]. The cardio-carotid interval measured only 1-32 second, and the cardio-radial 1-12 second.

Still referring to my own researches, I have proved diminution of delay of the pulse in other cases of aortic insufficiency, and have been able, also, to reproduce the same result on the schema. By way of illustration, simultaneous tracings from the schema are here presented. Fig. 2 shows traces from the ventricle and aorta, with valves intact. The impulses were given to the ventricle at successively increasing arterial pressures. It will be noticed that after the first pair of waves, at which the pressure was in equilibrium and the waves are synchronous, the interval between the ventricular impulse and arterial wave increases with the arterial pressure. Thus, with the

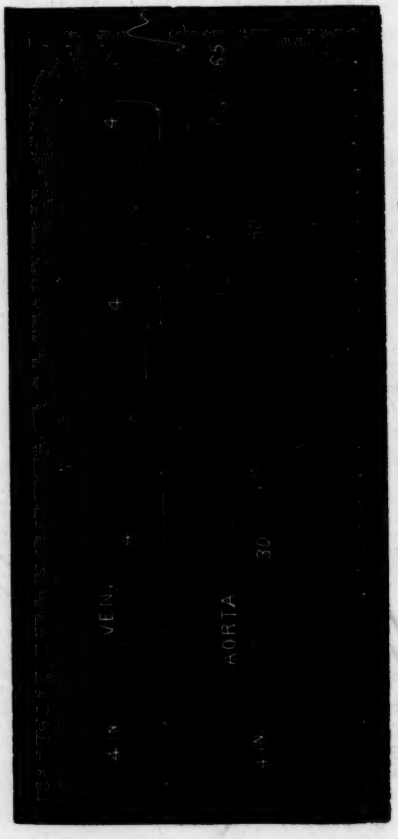

Fig. 2.—Simultaneous traces from the schema, with valves intact.

pressure at 30 inches (water manometer), the interval is 1–15 second, at 50 inches 1–10 second, and at 65 inches 2–15 second. These traces represent normal

[1] *Cincinnati Lancet and Clinic*, March 22, 1879.
[2] *Boston Medical and Surgical Journal*, September 30, 1880.

action and lengthening of the cardio-arterial interval under augmentation of arterial pressure.

Fig. 3 shows the result of a repetition of the same experiment, only with the important difference that the traces were taken with the aortic valve removed, in representation of large aortic insufficiency. Here

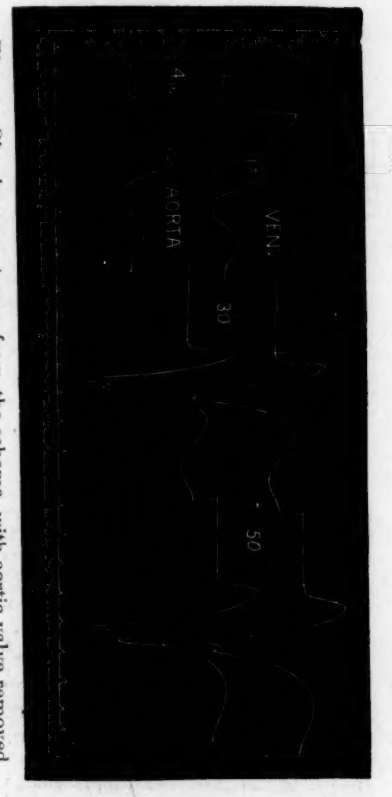

Fig. 3.—Simultaneous traces from the schema, with aortic valve removed.

the ventricular and aortic waves are synchronous throughout, and, besides, show a perfect parallelism of form.

Franck also experimented on animals, producing in them artificial insufficiency of the aortic valves, and proved the same diminution of the pulse-retardation observed as in man.

Thus experiments on man, on animals, and on the schema all concur in proving diminution of delay of the pulse in aortic insufficiency. The testimony is ample and complete, and establishes the fact beyond question. The acquisition is one of the triumphs of the graphic method, and affords a striking illustration of its power to redeem from error which otherwise had been perpetuated, and reveal the truth which otherwise had not been known.

THE MECHANISM OF THE PHENOMENON.

Our next inquiry relates to the mechanism of the phenomenon. The conditions concerned that influence the measure of the delay of the pulse are, (1) states of arterial blood-pressure; (2) states of the arterial coats as to elasticity or stiffness; (3) modes of ventricular contraction; and (4) relative states of ventricular and aortic blood-pressure.

1. It has been found that, other things being equal, the rate of propagation of the pulse wave tends to increase with increase, and decrease with decrease of arterial blood-pressure. Recent investigations, however, show that such modification from such cause is small at best, and frequently fails to manifest. In aortic regurgitation the mean arterial pressure is usually diminished, yet not unfrequently, when the lesion is well tolerated, the pressure maintains, or even rises above, its normal level. This cause, then, of modification of pulse transmission, would operate either against, or inadequately for, the production of the greatly abbreviated interval.

2. No fact in this relation is better established than that the velocity of the pulse wave is proportional inversely to the elastic extensibility of the arterial walls. In aortic insufficiency great expansion of the arterial walls is a notable phenomenon. This is due to the enlarged and hypertrophied ventricle sending into the arterial system at each systole a large volume of blood, which distends the vessels, and in diastole escaping backwards permits corresponding retreat of the walls. The walls themselves may not be more relaxed or extensible than ordinary, and the fact is the coats are often pervaded with atheromatous material, rendering them less yielding than in normal condition. However, in the absence of indurative changes, the parieties under the strain become dilated and thinned, and more yielding, unless fortified by developing hypertrophy of the muscular layers. Then no constant stiffening of the arterial walls obtains in aortic insufficiency on which can he predicated the very early appearance of the pulse in this lesion. But even if the walls were of brass, this cause of quickened transmission could not of itself account for the great precipitation of the carotid pulse, inasmuch as the reduction considerably exceeds the entire transmission interval between the heart and carotid point.

3. The mode of ventricular contraction, as quick or slow, exerts a marked influence on the amount of delay of the pulse. My own recent experiments have shown this, but they have also shown that the modification is confined alone to the presphygmic interval of the systole of the ventricle. Contrary to the conclusion of some other observers, my results demonstrate that the velocity of the pulse-wave is not in the least modified by the quickness or slowness of ventricular contraction. The ventricular presphygmic interval is notably shortened by a quick and lengthened by a slow contraction of the ventricle. In aortic insufficiency, although the coexisting hypertrophied left ventricle contracts with corresponding energy, there is no evidence that its initial systole is quicker than in normal action. Then mode of systole, notwithstanding its modifying potency, cannot certainly be invoked in explanation of the phenomenon in question.

4. It is the excess of blood-pressure in the aorta over that in the ventricle at the beginning of systole that measures with certainty the interval between the beginning of ventricular contraction and that of the aortic pulse. When the aortic valves are intact this interval lengthens with increase and shortens with decrease of this excess; and if the pres-

sures should be in equilibrium the two events will begin simultaneously. (See fig. 2.) But when the aortic valves are permanently open the pressures in the ventricle and aorta are always in equilibrium at the beginning of systole (the two cavities being in one), whether the mean pressure be low or high. In consequence of this oneness or equilibrium of pressure the heart's impulse and aortic pulse will be synchronous. (See fig. 3.)

The transmission interval between the aortic orifice and point of observation of the carotid pulse is comparatively short, not averaging more than half the duration of the cardio-aortic or presphygmic interval. Thus, by my measurements, the first averages .026 second, and the last .054 second, with pulse-rate at 75. In permanently patulous aortic valves the larger presphygmic interval is practically obliterated, while only the smaller cardio-carotid transmission interval remains as the delay of the carotid pulse on the heart.

The above is the true explanation, and, if allowable to say it, to the writer is due the credit of its first recognition and announcement. Franck at first did not grasp the mechanism of the phenomenon he had proved, but vainly endeavored to account for it by the theory of accelerated transmission of the pulse wave. His later deliverances, however, on this point, are in perfect accord with the true rationale here set forth.[1]

It is easy to explain the fallacy of an exaggerated delay of the pulse on the systole of the ventricle in aortic insufficiency. The enlarged ventricle suddenly filling from both the aorta by reverse, and the auricle by direct flow, communicates a shock so marked as to be mistaken for systole. This impulse occurring in the first part of diastole, and preceding the arterial pulse at such distance, gives the impression of enormous delay of the pulse. In figure 3 the length and steepness of the diastolic ascents show how easily the diastolic impulse would be taken for the systolic beat. The fallacy arose from an error of observation, which the graphic method was needed to correct.

THE DIAGNOSTIC VALUE OF THE PHENOMENON.

Excessive diminution of delay of the arterial pulse, notably the carotid, is a sign of the highest importance in large aortic insufficiency. No other condition, or combination of conditions, except one to be considered, is capable of producing such marked precipitation of the pulse on the heart. The exception consists in the combination, found only in fever, of quick systole and tendency to equilibrium of ventricular and aortic blood-pressures, these conditions also invariably associated with frequent pulsations. The febrile condition, then, with quick cardiac systole, frequent pulse, and low arterial blood-pressure, is capable of reducing the cardio-carotid interval, the same as aortic insufficiency, to the value of the transmission time. These factors, when present, are well declared, and in their absence the graphic sign is pathognomic of the lesion in question. In positive value it outranks diastolic basic murmur; which, as well known, may originate in the aorta without regurgitation, or again with only slight regurgitation, which takes place in the first part of diastole, whilst the altered valves are falling into position of closure. Besides, there is difficulty sometimes in distinguishing between aortic regurgitant and mitral direct murmur of the first part of diastole.

As to default of this sign, in large aortic insufficiency it never fails, except perchance in the presence of an extensible aneurism of the first part of the aorta. The fact that an aneurism with yielding walls produces delay of the distal pulse has been well established in these recent years. Then, in a case of large aortic insufficiency, complicated with a yielding aneurism of the ascending aorta, the precipitating effect of the valvular lesion would be more or less counterbalanced by the retarding effect of the aneurismal pouch, and the carotid pulse would observe, or approach, the normal amount of delay. If aortic aneurism be eliminated, the presence of abnormal precipitation of the carotid pulse is conclusive, in any case, of an open state of the aortic valves.

From this declaration it is plain that the writer does not admit, with François-Franck, default of the sign in the presence of concomitant cardiac valvular lesions. Co-existing aortic stenosis would give the characteristic sloping ascent, but the beginning of the pulse would be in no wise delayed. This has been demonstrated on man and the schema. Mitral regurgitation co-existing, auricle, ventricle and aorta would constitute one cavity, with blood-pressure in equilibrium at the end of diastole, and the blood would be as promptly sent forward into the aorta as in pure aortic insufficiency. Nor could mitral contraction, if present with aortic insufficiency, cause any delay of passage of blood from the ventricle, as the pressure in the latter at the end of diastole would always be equal to the aortic pressure. Hence, whatever the cardiac complication, there is no failure of abnormal precipitation of the beginning of the pulse as a sign of permanent aortic insufficiency.

But the fact must not be lost sight of that this sign, so positive and constant in large aortic insufficiency, will fail to manifest in the form of incomplete lesion, in which the valves permit of regurgitation in the first part, but effectually close in the last part, of diastole. In this state of things, when systole begins, the valvular barrier and excess of aortic blood-pressure being present, time is lost in overcoming the resistance, and abnormal precipitation of the pulse fails to occur. However, default of the sign in incomplete insufficiency is more than compensated in diagnostic import, in that the absence of abnormal pulse precipitation in a case of aortic regurgitation, certainly diagnosticated by the ordinary physical signs, would indicate a partial and not complete insufficiency of the valves; and, aortic aneurism excluded, would be conclusive of this distinction.

In *résume:*

1. Abnormal diminution of the retardation, or, in other words, abnormal precipitation of the arterial pulse, notably the carotid, on the systole of the ventricle in large aortic insufficiency, is a fact positively established, the phenomenon depending purely upon extinction of the normal ventriculo-aortic, or pre-

[1] Compt. Rend. de la Société de Biologie, 27 Janvier, 1883.

sphygmic interval. Hence the phenomenon becomes an important diagnostic sign of this lesion.

2. The presence of the sign is positive evidence of the existence of the lesion, provided only there is no quick febrile movement in the case.

3. Default of the sign does not occur in the presence of concomitant cardiac lesions, but occurs only in the presence of a yielding aortic aneurism. Hence,

4. Absence of the sign is positive evidence of absence of the lesion, provided only there is no aortic aneurism in the case.

5. If the diagnosis of aortic regurgitation is otherwise certain, absence of the sign, aortic aneurism eliminated, is positive evidence of the incomplete nature of the insufficiency.

ACUTE INFLAMMATION OF THE LUNGS IN YOUNG CHILDREN UNDER SIX YEARS OF AGE.

BY A. PATTON, M.D., OF VINCENNES, INDIANA.

[Rèad to the Section on Diseases of Children at the session of the American Medical Association, June, 1883.

That acute inflammation of the lungs in young children is marked by different phenomena, and runs a very different course from what it does in older children and adults, all medical writers agree, so far as I am informed. The division of the lungs of young children into lobules instead of lobes, and the minute size of the air vesicles, together with their highly membranous and vascular condition, would necessarily lead to important peculiarities in their diseases. From these and other causes children do not have true lobar inflammation of the lungs until, by the progressive incorporation of elementary parts, the lungs attain a state of development that will admit of higher degrees of inflammatory action. It is affirmed by high authority that infants under the age of one year seldom if ever have inflammation of the lungs in any known form. They are, however, liable to have catarrhal fever and acute bronchitis, but nothing that resembles pneumonitis. During the second year, and especially in the dentition period, they are apt to have such a complication as is styled inflammation of the lungs. This, however, is very different, both in pathology and symptomatology, from true pneumonitis, but is equally apt to prove fatal. As the child grows, and its respiratory system develops into a higher state of perfection, it becomes subject to other forms of lung inflammation. Of course, the age at which this state of advancement takes place cannot be determined positively, as it depends partly on the vigor and health of the child. Some authors place the age at six years, others at five, and one thinks true lobar pneumonitis may occur as early as three years. As a general rule, children are not liable to have true pneumonitis until they are five or six years of age. The question then presents, What form of inflammation of the lungs do children have from infancy up to the ages just mentioned?

The older writers claimed that they had lobular pneumonitis, while later writers have named the disease catarrhal pneumonia. But as there are several forms of inflammation of the lungs in young children, it would probably indicate a sounder view of the pathology to name each kind in strict accordance with its nature and cause.

Before the wonderful discoveries in auscultation made by Laennec and others, there was but little distinction made between bronchitis and pneumonitis. They were both styled inflammation of the lungs. This dark era, however, has given place to the reign of the bright sun of science that has cast its effulgent rays into the deepest recesses of the respiratory system, and reveals to the ear of the experienced auscultator every abnormal sound and diseased condition of the lungs. He can say here is the mucous râle of bronchitis, there the crepitating sound of pneumonia. A little higher up is hepatization, and in a spot not larger than a ten cent piece is softening of the hepatized lung.

While this is grandly true in the lung diseases of the adult and children over six years of age, we have to admit that in younger children we are compelled to rely more upon symptoms and less upon physical signs in the investigation of their diseases. It is true that by inspection, application of the hand, mensuration, percussion, and auscultation, we can decide some very important clinical questions as to the seat and nature of the lung diseases in young children. I regard it as far safer and better to study closely the symptomatology of children's diseases, and not rely too implicitly upon physical signs.

If a child has fever, heat of skin, loss of appetite, and a cough that is attended with cries of pain, we may know there is inflammation about the lungs, either in the bronchia, pleura, or lobules.

If we see the case at or near the commencement of the disease, we may conclude we have acute bronchitis to contend with, but which may, and doubtless will, extend to other tissues of the lungs if not arrested. If the disease extends no farther than the large bronchia, we need expect no serious results. But, unfortunately, the tendency is to pass into the minute vesicles, producing vesicular pneumonitis. Then we have a very dangerous disease to contend with. This may be styled one of the forms of inflamtion of the lungs in young children. Another complication that is apt to occur during the progress of acute bronchitis, is acquired atelectasis, or collapse of one or more groups of lobules. This is caused by tenacious lymph plugging up an air tube, which produces complete occlusion, cutting off the air to the adjoining lobules, which necessarily causes their collapse. This is a source of danger in two ways—by lessening the lung capacity, and developing lobular inflammation. We now have another form of lung inflammation, which may extend from lobule to lobule until a fatal termination results.

A still more serious complication is hypostasis, or passive congestion of that part of the lung that is most pendent favoring gravitation of the blood. This condition acts as a foreign body, which in most cases develops another form of inflammation of the lungs. This takes place as a result of weakened action of the heart, and a tendency in the blood to coagulation, favored, of course, by the child maintaining the same position. Another, and perhaps a more frequent

complication, is the extension of the inflammatory action from the bronchia directly to the lobules, constitnting broncho-pneumonitis. This is the catarrhal pneumonitis of a late author, but as it is a consequence of the bronchitis, it would, in my opinion, be more proper to style it broncho-pneumonitis. If acute inflammation of the lungs in young children only occurred as a consequence of bronchitis, it would be most fortunate for the little sufferers. But such is not the case. Rubeola, pertussis, variola, remittent fever, and even difficult dentition, are very apt to become complicated with inflammation of the lungs in young children, and often lead to a fatal termination.

One writer, Grisolle, says that in seven-eighths of all cases of gastritis, five-sixths of all cases of cancrumoris, one-third of all cases of enteritis, measles, and whooping-cough, one-fourth of small-pox, one-seventh of continued fever, one-sixth of all cases of acute inflammation of the brain, one-fourth of diseases of the heart, one-sixth of cancer and organic diseases of the liver, cirrhosis, and Bright's disease, there occurs this most dangerous complication—pneumonitis. It often occurs after amputation, and in extensive wounds, burns, etc.

No doubt, the leading factors in the development of this complication in so many forms of disease are hypostasis and hyperinosis, especially in the adult. In young children obstruction of the air tubes, causing atelectasis, is no doubt a frequent cause of this pneumonic complication, as well as hypostasis. As all the forms of pneumonitis in young children to which I have referred are secondary to bronchitis, or some other form of disease, we may justly style it as an accidental complication, and never idiopathic. It is not by any means an easy thing to determine just when this complication begins or where it is located. True, we may by percussion find dullness, indicating either passive congestion, atelectasis, carnification of the lung, or inflammation of the lobules, which may have assumed an imperfect form of hepatization, but we cannot say certainly which condition it is. Fortunately, however, it is not very important to diagnose these abnormal conditions accurately, as the treatment is the same in all, in young children, varied, of course, by the gravity of the symptoms, stage of the disease, and such other conditions as should influence treatment in the adult. I do not underrate the value of auscultation in this form of lung trouble, as we may be able in some cases to detect the crepitating sound of pneumonitis, but it is an uncertain guide. When I do employ auscultation, I do not pounce down upon the poor trembling child with one of Camman's double stethoscopes like the unicorn upon the frightened gazelle, but quietly apply the ear to the little sufferer's chest, which is a better method than most stethoscopes—I mean for young children. A far better stethoscope than Camman's or any hollow tube is one made of solid hard wood, which transmits sound with more rapidity and far more accuracy than the hollow tube. Sound in air travels at the rate of 1.190 feet per second, while in hard ash wood it travels at the rate of 15,314 feet per second. (Norton's Natural Philosophy.) If we use a tube we get a double sound, the first reaching the ear through the hard wood or rubber, the other by the air in the tube, which is calculated to produce confusion. When the tubes are inserted in both ears we have a still greater source of confusion, as the hearing power in most persons is not equal in both ears.

If we observe the symptoms closely, we will be able to determine, by the increased frequency of the pulse, the frequency and irregularity of the respirations, the moaning of the little sufferer, and the higher temperature and tight cough, that a dangerous lung complication has supervened. We must not conclude that because young children do not have a true form of pneumonitis, there is no danger from the kind of inflammation of the lungs they do have, for it may be safely affirmed that three-fourths of all deaths before the age of six years are caused either directly or indirectly by inflammation of the lungs and acute bronchitis. Then the question of treatment becomes a very important one, indeed.

In devising methods of treatment in all diseases, we should be guided by sound views of pathology and an accurate knowledge of the action of the remedial agents we employ. Any other practice is empirical, and not in any sense scientific. In the discussion of methods I may differ with some of our highest authorities. But if I give good, sound, scientific reasons for my plans of treatment, they ought, at least, to secure your thoughtful and serious consideration.

Most, if not all, authors advise that the heart's action of these delicate young patients should be moderated by such powerful nervous sedatives as aconite and veratrum viride. This I must regard as a dangerous practice, for the reason that the tendency in all cases of inflammation of the lungs in young children is to debility and depression of the vital powers. The imperfectly decarbonized blood in cases where the lungs are seriously disabled is itself a powerful poison to the great nerve centres, tending to a weakened action of the heart and a lowering of the vital powers, leading towards a fatal result. Any medicines that weaken the action of the heart, as do aconite and veratrum viride, favor capillary engorgements, hypostasis, abscesses, suppuration, and gangrene. And, as the disease so certainly tends in the direction of these alarming complaints, we should do nothing that is calculated to lead to these very results. The old practice of bleeding and tartar emetic was not more dangerous than the one just referred to. Opiates are advised to relieve pain, cough, and restlessness, and alcohol is highly recommended to sustain the vital powers and to stimulate the heart to more vigorous and energetic action. I object to both these agents upon the same ground—they prevent the elimination of carbonaceous matter through the lungs, prevent the excretion of urea and other impurities through the kidneys, thus favoring the course of the disease by holding these poisons in the blood and determining them to the brain and great nerve centres, producing impaired vital powers, and leading directly to the worst forms of cerebral complication, as delirium, convulsions, and coma.

A special objection to alcohol is that it favors coagulation of the blood, leading to embolism and hypostasis—and the still more potent objection, that it increases hyperinosis, which must necessarily develop a higher degree of inflammatory action, involving contiguous tissues in the consuming flame.

If these agents are objectionable because they favor the progress of the disease, a most important question presents itself: What is best calculated to *arrest* the disease? If a building is on fire the first thing is to destroy the combustibility of the burning material. This principle holds good in inflammation. Subdue as speedily as possible its main supporters. It is admitted that in pneumonitis, either in adults or young children, there is hyperinosis before the pneumonitis is developed, and this constitutes the main factor in the disease. Destroy the excess of fibrine, and you have the disease under control. If there was no hyperinosis in inflammation of the lungs in young children, as some contend, we would only have the mildest form of catarrhal fever. I admit that it is far less than in older children and adults, but there is quite enough to produce the most disastrous results and destroy life. The many forms of embolism, the plugging of the air tubes by coagulating lymph, producing atelectasis, the inflammation resulting from hypostasis, and the extension of the inflammation from the bronchia to the lobules, and from lobule to lobule and from tissue to tissue, are unmistakable evidences of hyperinosis, or excess of fibrine in the blood.

It is admitted by all writers on the subject that the exudate is sufficiently fibrinous to produce an imperfect form of hepatization in most cases. This is another proof of hyperinosis. How to efficiently meet this indication is an important question. The observing housewife long ago discovered that if she had a tough bird to deal with, by applying bicarbonate of soda in liberal quantities at night the bird would be nice and tender for breakfast. The alkali had dissolved the fibrine in the bird, which is just what we want to do in the blood of the pneumonic patient. In mild cases I begin with the benzoate of soda, as a cough syrup. If, however, the case is threatening, I use the more powerful agent, ammonium carbonate, in doses of one to three grains, dissolved in water and syrup, and give every two to four hours. This destroys the tenacious quality of the mucus secreted by the bronchia, and causes it to be thrown off in the usual way, and not to adhere to the walls of the air tubes, interfering with the respiratory functions. This form of medication should be kept up throughout the attack, as it will prevent those dangerous complications to which I have frequently referred in this paper by reducing the excess of fibrine. Another remedy, which accomplishes mechanically the same result in removing the tenacious mucus from the bronchia, is an emetic of sulphate of copper or alum. This is a valuable means of relief, and should not be overlooked.

This ammonium carbonate is not only a powerful defibrinizer, but is equally a decarbonizer, which is effected by its chemical action and the elimination of this poisonous agent through the kidneys and lungs. It is also a safe and very efficient stimulant—far safer and better than alcohol in any form. Another valuable procedure is heat and moisture in the form of a flax-seed or corn-meal poultice, applied to the entire thorax, and kept up with great regularity. This is a thousand times better and safer to relieve cough, pain, and restlessness than opiates.

A remedy that has a tendency to expand the capillary vessels and prevent congestion and gangrene is eucalyptus, a medicine that I have found very useful in pneumonic inflammation of young children. If there is any malarial complication we must not fail to give quinine; and if there are signs of weakening of the heart's action we may give with advantage tincture of digitalis, which is our most reliable heart tonic. If a counter-irritant is needed, we may employ a very mild croton oil liniment, or mustard mixed with the poultices may be used instead.

Mild aperients or enemata may be given as required.

The limited time allowed me forces this paper to be only suggestive, and not by any means exhaustive. If, however, it should encourage a spirit of inquiry, and a more thorough investigation of the pathology and treatment of the inflammatory diseases of the lungs of young children, I will be fully compensated for the labor and thought devoted to its preparation.

THE RADICAL CURE OF CERTAIN FORMS OF HERNIA BY A NEW OPERATION.

BY REUBEN A. VANCE, M.D., CLEVELAND, O.

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[Read to the Section of the American Medical Association on Surgery and Anatomy.]

The study of nature's method of curing an oblique inguinal hernia, shows there are two important processes at work—one, a band of adventitious tissue about the neck of the sac constantly tending to contract and close the abdominal opening at the inner ring; the other, the return to place of the two layers of transversalis fascia, the separation of which originally permitted the viscera to protrude, and the reunion of which forms a valve strong enough to prevent a recurrence of the hernial protrusion. Both processes must operate if the patient is to be cured. The frequency with which these measures are interfered with by local conditions, explains why so few patients with hernia recover spontaneously.

Trusses, by keeping the viscera in place and allowing the structures about the neck to contract, favor the cure of the lesion. The same is true of certain surgical operations. A moment's consideration of the anatomy of oblique inguinal hernia, and a glance at the pathological processes in operation in such cases, will show why so few are permanently cured, despite the perfection of nature's processes for the accomplishment of that end. The neck of the sac can not contract, for it is almost constantly distended by some part of the abdominal viscera. The displaced folds of transversalis fascia cannot return to their proper position, for the same reason. Not only

this; abdominal pressure tends to dilate the hernial orifice, while the protruded viscera force the inner ring downward and towards the middle line. Nevertheless, the surgeon can readily return the hernia, and place the parts in such position that nature can employ her reparative powers to best advantage. Examine an oblique inguinal hernia in the dead body, and it will be found that by proceeding in a certain way the sides of the inner ring—it matters not how largely it may be dilated or how far displaced—can be brought together. To do so, however, traction must be made upon the segment of the circle next the median line, so as to draw it downwards and outwards. This proceeding converts the ring into a slit, the long axis of which is directed downward and inward. One or more stitches properly inserted will hold the parts in this position. The anterior and posterior walls of the inguinal canal can be brought in apposition in the same way. Finally, the pillars of the external ring can be transfixed and united by suture. The closure of the internal ring, and its conversion into a simple slit; the union between the anterior and posterior walls of the inguinal canal thus brought about; and finally, the attachment of the pillars of the external ring, combine to transform the former open passage way of the inguinal canal into a firm, unyielding valve, that renders hernial protrusion an impossibility. Imagine these steps taken on the person of one suffering from oblique inguinal hernia. Would not the parts be placed in the best possible condition for such union as would result in a radical cure of the hernia? Experience abundantly attests that such is the fact. That the reparative processes may be understood in their completeness, it must be borne in mind that peritoneum differs from integument or mucous membrane, in that to procure union it suffices to press serous surfaces together, while to unite either of the others the severed edges must be brought together, and retained in apposition until adhesion occurs. Consequently the peritoneal surfaces at the inner ring, in the canal and between the pillars of the inguinal outlet, when apposed in the manner described above, adhere and blend together within a few hours; in time the marks of the oblique slit at the inner ring disappear by the gradual contraction of the band of adventitious tissue that marked the neck of the hernial sac; the formerly separated folds of transversalis fascia are brought together and firmly blended by the same process, while the union of the serous walls of the inguinal canal, and the attachment of the pillars of the external ring, complete the steps that mark the re-establishment of such a valve as alone can make this weak portion of the abdominal wall sufficiently strong to resist the tendency to protrusion of the abdominal contents.

I will mention in this connection that I now have a patient preparing for an operation for the cure of right inguinal hernia, who formerly had double hernia of that character. In this case the left external ring and inguinal canal are still open, protrusion is prevented by contraction of the neck of the old sac, uniting the folds of transversalis fascia. Here we have one of nature's conservative provisions effecting a cure; occasionally this process is prevented by displacement of the band of adventitious tissue at the neck, instead of the opening between hernial sac and peritoneal cavity closing and the continuity of the transversalis fascia being re-established, thus curing the hernia, the constriction is forced into the canal, and a partial diaphragm is formed between the neck and fundus of the hernial sac. Although cases similar to the one above alluded to, demonstrate that the transversalis fascia is the main element in preventing hernia, yet experience shows that it is desirable in operating for the cure of rupture to obliterate that portion of the sac in the inguinal canal as well as close the internal and external rings. Devise some plan for carrying the inner portion of the transversalis fascia into contact with the outer, at the internal ring, and the other steps in the attempt to convert the open inguinal canal into a resisting valve are easy of execution. The following method has been very successful in my hands:

Place the patient in a recumbent posture, reduce the hernia by invaginating the scrotum, determine the situation of the internal and external rings and the axis of the inguinal canal. Mark these boundaries on the skin with tincture of iodine, and then draw a short line at right angles to the axis of the inguinal canal, from the upper and inner to the lower and outer border of the internal ring. Next force the unarmed end of a Dowell's hernia needle through skin, fascia, aponeurosis of the external oblique, and tissues intervening between the latter and the parietal layer of the peritoneum, into the abdominal cavity, locating the puncture at the lower and outer end of the short line drawn at right angles to the axis of the inguinal canal.

Carry the end of the needle cautiously upward and inward, in the direction of the just-mentioned short line, until its point is about half an inch beyond the border of the inner ring; then force the point straight through all the structures above it and make it penetrate the skin. The end of the needle heretofore in the surgeon's hand is charged with a strong strand of silk, and in the further manipulation of the instrument great care must be exercised that none of the abdominal viscera be needlessly injured. The threaded end of the needle is passed into and out of the abdominal cavity, but the instant its point passes beyond the upper and inner border of the sac, its course is changed, and instead of drawing the threaded end out, the latter is forced downward through the tissues of the inguinal canal by the side of, but without the lower and outer border of the internal ring, and then into the same canal in aponeurosis, external oblique, subcutaneous fascia and integument, the needle made when first introduced. Thus the strand of silk enters and leaves by the same canal so far as the structures between the aponeurosis of the external oblique and the skin are concerned, but below that all is different. In effect, a noose is thrown from the fixed layer of transversalis fascia to the movable one, and the latter with its peritoneal envelope and intervening adventitious tissue of the neck of the sac, is drawn downward and outward, and so fastened in its new position as to obliterate the internal ring without injuring the spermatic cord.

A single suture used in this manner initiates reparative processes that alone suffice to prevent hernial protrusion.

The first suture is introduced, but not tightened; its extremities are left in care of an assistant, and the needle is again threaded for use. Its insertion for the second suture is peculiar, and is in imitation of Dowell's plan; the integument and all loose subcutaneous tissue are elevated between the thumb and fingers of the right hand, if the patient has left inguinal hernia, the point of the thumb just touching the line marking the axis of the inguinal canal. The needle is grasped in the left hand, and its unarmed end is thrust through the duplication of tissues, its point entering about midway on the line marking the axis of the inguinal canal. As soon as the point appears through the fold of skin it is grasped and the armed end drawn into the tissues. This manœuvre carries the end of the needle armed with silk into contact with the aponeurosis of the external oblique; the needle is now so manipulated that this extremity is forced through the aponeurosis into the inguinal canal over the spermatic cord, through the posterior wall of the canal and thence out of the abdominal wall at the point the curvature of the needle causes it to emerge. The unarmed end follows, but is not permitted to come further than the surface of the aponeurosis of the external oblique, the direction of the needle is reversed, its point kept close to the surface, of the aponeurosis and finally brought out at the opening through skin and superficial fascia it made when inserted. This makes a noose that can, in oblique hernia, simply bring the posterior wall of the inguinal canal into contact with the anterior, or in cases of long standing in which the internal opening is displaced, attach the margins of the pillars of the external opening, as well as approximate the surfaces of the canal.

A third suture is carried into place in the same manner, but it is inserted into the pillars of the external ring just above the level of the cord, and its extremities emerge from an opening at the lower end of the line marking the axis of the canal. During these manipulations the index finger of the operator invaginates the scrotum and occupies the inguinal canal, in which position it can guide the needle in its passage through the parts about the internal ring and inguinal canal. The sutures passed, they are carefully tightened, beginning with the one first introduced, and the influence of each estimated by the finger in the canal before being finally fastened. A medium sized key separated from the abdominal wall by four folds of antiseptic gauze, should be used to receive the ligature knots. Some point on the ring of the key will do to support the knot on the first suture, the handle of the key will bear the others. The patient had better be anæsthetized with ether for this operation, as the surgeon can then proceed leisurely with his work. After the ligatures are secured the patient should be removed to his bed, and for the next week maintain the recumbent posture. At the end of seven days the bandages are removed and the ligatures taken out. Should any local tenderness develop, the surgeon should at once control it with rubber bags of ice.

I have operated in 32 cases by Dowell's method; in the 19 cases in which I have used the procedure set forth above, the result, so far as the present condition of the patient is concerned, is all that could be desired.

MEDICAL PROGRESS.

Operations on the Kidneys.—*Nephrectomy.*—Mr. J. Knowsley Thornton gives the record of three successful cases of nephrectomy in the *Lancet.* The first was published June, 1880, but is again given in connection with the others. It was performed on a child of seven, who had suffered with swelling of the abdomen since she was two years old. The diagnosis of renal tumor having been made, an antiseptic aspiration was performed, resulting in the removal of six pints and a half of rather dark and cloudy urine. Two months later the tumor had re-filled and the left kidney was removed through an incision in the median line to the left of the umbilicus. Bichloride of methylene was the anæsthetic used. The ureter was found to be merely a thin fibrous cord. Wound healed by first intention on the sixth day, and the patient was running about the ward on the fourteenth day.

The second case was in a woman of 26, who, after her third pregnancy, eleven days after labor, suffered from inflammation in the right iliac fossa, followed by pain and swelling in the left leg. Six weeks after delivery pain persisted in the right side, which was spasmodic and along the course of the ureter to the right thigh. A fluctuating tumor of considerable size was found in the right loin, and the urine was loaded with pus, ammoniacal and offensive. The kidney was cut down upon through the loin, and Mr. Thornton notes the much greater amount of hæmorrhage as compared with the abdominal section, and the very imperfect knowledge to be obtained as to the condition of the kidney. A sacculated kidney was found, with very offensive pus; two drainage tubes were introduced; the greater part of the wound closed and antiseptic dressings applied. The second day after the operation the bladder urine was free from albumen. The urine soon showed signs of carbolism, and on the fifth he changed to eucalyptus gauze, but in a very short time pus soaked through sixteen layers of the gauze and teemed with bacteria. Ultimately the wound healed fairly well, but the temperature rose, pain increased, the appetite failed, and thirty-five days after the first operation the kidney was removed through the abdominal walls by an incision along the outer border of the right rectus abdominis. After removal the wound was sponged with tincture of iodine, and as there was still some oozing, perchloride of iron was applied, a drainage tube was used, the wound closed, and the end of the ureter brought outside and fastened with a pin. The kidney weighed 1 lb. 2½ oz. The wounds healed completely on the eighteenth day, after which the patient passed from a pint to a pint and a half of healthy urine daily. The constitutional disturbance was decidedly less after the nephrectomy than after the nephrotomy.

The third case was in a woman, æt. 58, suffering from a large, fluctuant tumor in the right side of the abdomen, containing pus, which had been removed four times by aspiration; pus in the urine, and chronic bronchitis was present. The operation was through the abdomen to the outer side of the right rectus abdominis. The kidney was first tapped and twenty pints of pus removed. The kidney was enucleated with difficulty, and the cut ureter attached to the outer edge of the wound. After all the sutures were fastened a sponge was missing; some were then removed, and the sponge found in the bottom of the capsule, causing the operation to last three hours. The kidney weighed 4 lbs, 7 oz., consisting of two large chambers, with a round opening between them. The cause of all the mischief was a small, umbrella-shaped stone, its front being firmly wedged into the mouth of the ureter. There were no complications, the wound healed slowly, and two months later she was strong and well.

Mr. Thornton, at a meeting of the Royal Medical and Chirurgical Society, also reported a case of a woman æt. 37, who suffered from a fluctuant tumor of considerable size, in the right side of the abdomen, with a red, tender and pointing swelling in the right loin, which was freely incised, discharging fluid with an immense quantity of cholesterine, was drained and treated antiseptically, healing in about six weeks. Two months later the wound opened, and again discharged, healing slowly; this accompanied an attack of gout in both feet. Two years later she was operated on by Mr. Thornton for right ovarian tumor, which was removed. While the abdomen was open he examined the kidneys and ureters. The right kidney was large and sacculated, and its ureter was much enlarged, especially at the pelvis rim. The left kidney and ureter appeared quite normal. The recovery after ovariotomy was rapid, but in six weeks the swelling on the right returned and discharged as before. Six weeks later there was a similar discharge from the left iliac region. Fifteen months later the wound in the right side again opened, and discharge went on for fourteen months, without apparently affecting her health at all. Two months had elapsed since its last closure, and she is in excellent health.

Dr, Henry G. Rawdon at the same meeting reported a case of nephrectomy with lateral cystotomy for rupture of the kidney, consequent upon a fall, in a boy æt. 12. The right kidney was removed on the seventeenth day by lumbar incision; on the twenty-first day lateral cystotomy was performed, and a free drain for the urine established. Death took place on the fortieth day from pyelitis and circumscribed suppuration of the left kidney.

Sir T. Spencer Wells reported the removal of an enlarged cancerous kidney, in a man æt. 58, with death on the fifth day. He dwelt on the importance of uniting, in all cases of nephrectomy by abdominal section, not only the divided peritoneal coat of the anterior abdominal wall, but also the divided peritoneal covering of the kidney.

Prof. J. Marshall gave a case of traumatic suppurating hæmatoma, connected with the left kidney, in a girl of 13, which was treated by puncture and drainage for a little over three months with recovery. The fluid withdrawn contained 5.5 per cent. of urea, whereas the urine contained from 2.4 to 3.6 per cent. Although there was no history of hæmaturia, the urinous odor given off on boiling the fluid, and the high percentage of urea it contained, pointed to a possible laceration of the kidney itself.

Mr. Berkeley Hill, in a woman, married, æt. 26, suffering for some years from attacks of pain in the right hypochondrium, with vomiting, found a soft, fluctuating swelling in the right lumbar, and partly in the umbilical and iliac regions. The urine contained pus and albumen. After aspiration had been performed, resulting in the withdrawal of 4½ oz. of pus, the swelling rapidly enlarged, was laid open and found to be a distended kidney, from one of the recesses of which he extracted an irregular calculus, weighing 64 grammes. Urine ceased to discharge from the wound 31 days after the operation. There has been no return of pain, the kidney can be felt as a tender, firm mass and there is still pyuria.

AFFECTION OF THE EYES ASSOCIATED WITH NORMAL MENSTRUATION.—Dr. M. Landesberg of Philadelphia gives two cases in the *Centralb. für prakt. Augenheilkunde*. The first is a case of herpes of the cornea, in a girl of 15, who 7 months before had menstruated for the first time; the flow returned regularly and was normal in duration and degree, with some pain in the back and head as premonitory symptoms. She was seen at six succeeeding menstrual periods, when each time there was a recurrence of the eruptions, after it had disappeared entirely during the intervening period, with one exception which is noted. At the first period at which she was seen, the eruption affected the right eye, with a slight injection of the left; at the second period, both eyes were affected; at the third, both; at the fourth, the right only, but the condition persisted up to the time of the fifth, when it was increased in severity; at the sixth, the right eye alone, and at the seventh, both eyes were free. The family removed and the case was lost sight of.

The second case was in a negro girl of 14, strong, well built and in good general health. Her menses were established 10 months previously, were regular and without trouble. Among the premonitory symptoms were blood pressure in the head, noises in the ears, sparks before the eyes, and an unusual feeling of warmth in the whole body. Twice nose bleeding had taken place with the commencement of the menstrual flow. She was brought before the doctor, to ascertain what was the matter with her right eye, of which at several periods in the last few months she had complained of the loss of sight; this it seems was coincident with the onset of the menses, improved with its close, and in 8 or 10 days perfect vision returned; this had already occurred three or four times. The right eye was strongly injected, with a normal cornea and iris, $S=\frac{10}{100}$ Jaeger 10. Field of vision free. With the ophthalmoscope, aqueous humor red, and at the base of the anterior chamber a thin layer of dark red blood. After dilatation of the pupil, the vitreous humor was clear, there was a slight venous

hyperæmia of the retina, and a marked curving of the vena ophthalmica superior. The left eye was normal. The blood was reabsorbed and normal vision restored in about 10 days.

Two days before the next menstrual period, Oct. 20, the eyes were again examined and found to be normal. The girl complained of blood pressure in the head and of pains in the back. The ears felt warm, the face was heated, the breasts were hard, and the nipples turgid; perspiration was marked. Oct. 21, increased blood pressure in head; ears and face hot; hands warm and moist; ciliary vessels of the right eye strongly hyperæmic.

On the evening of Oct. 22, appearance of the menses coincident with a dark red cloud before the right eye. Twenty-one hours later an examination showed the following: Right eye, marked venous hyperæmia of the conjunctiva of the eye-lids; aqueous humor red. At the base of the anterior chamber a thick layer of bright red blood; at the fundus of the eye venous hyperæmia. S.=$^{10}/_{70}$ Jaeger 8. Field of vision free. Left eye, normal. Spontaneous resorption of the blood and return to normality inside of eight days. At the following menstrual period the same condition and course was observed. At the December menstrual period the same condition was repeated. April 5, the girl was three months pregnant, and the right eye had remained normal since the December period.

Spontaneous Development of Gas in the Bladder.—M. F. Guiard has collected a number of these cases which he reports, in detail, in the pages of the *Annal. des Malad. des Organes Genito-Urinaires*, with the conclusions that, where there is no abnormal communication between the urinary passages and the alimentary canal, the phenomenon is very rare. Its clinical symptom is the escape of gas through the penis, and seems to be connected with a special fermentation of the urine, which is only observed in those cases of glycosuria that have been submitted to catheterism. The sugar, under the influence of particles of ferment introduced by the instrument, has resolved itself into alcohol and carbonic acid. This, then, is a symptom of glycosuria, but it seems to have no value in prognosis of itself.

Prolapsus of the Rectum Treated by Injections of Ergotine.—M. Jette has treated with success sixteen cases by the use of ergotine in solution with cherry laurel, 1 gramme to 5 grammes, injecting 15 to 20 and 25 drops every other day. The needle is introduced about 5 millim. from the renal orifice, parallel with the walls of the intestine, and should penetrate to the depth of 2 to 4 centim. into the thickness of the sphincter fibres. The injection should be introduced gradually on account of the pain it produces. The pain is at first very severe and lancinating, then becomes dull and constant, lasting for several hours. The treatment may take a few days or several weeks to effect a cure. With a feeble dose there is a frequent desire to go to stool and to urinate, with strong doses there is a spasm at the neck of the bladder, dysuria, or a retention of urine for eight or ten hours. In a few patients Vidal has noted vertigo, a tendency to syncope, a painful sense of constriction about the heart, with a hard, firm and somewhat slow pulse. The later injections are more active than the first, and seem to indicate a cumulative action, as in digitalis. Vidal uses this means also, as applied to old hæmorrhoidal tumors, which protrude and are accompanied by paralysis of the sphincter. The tumor is forced either from its cutaneous or mucous surface, becomes dusky and tender, but is very favorably modified without forming abscesses.—*Therap. Contemp. Med. et Chir.*

A Case of Urethral Calculus.—Cultivator, æt. 36; admitted to hospital for obstruction in the passage of urine, which had been passed with great difficulty and only in drops for the past five days. History of chronic gonorrhœa of two years duration, but none of stricture. On examination the penis was swollen and œdematous, and a hard, painful tumor, the size of a small orange, was found just in front of the scrotum. A No. 6 silver catheter was passed into the urethra, but its progress was impeded at the seat of the tumor, and its contact with a stone evidenced by the metallic click and a grating sensation. He was placed under chloroform, an incision about 1½ inches long was made over the inferior wall of the urethra, and a stone measuring 2¼ x 1½ x 1 inch, weight 980 grains, was removed. In six weeks time, with the use of carbolized dressing and catheterism, the wound was represented by a minute fistula. The stone was a uric acid calculus.—*Indian Medical Gazette, Calcutta.*

Death Following a Rectal Injection of Sol. Acid Carbol.—A case has recently been concluded in the High Court of Calcutta, to which the *Indian Medical Gazette* devotes considerable space, and where a boy of five had been suffering from bloody diarrhœa and the presence of thread worms. The physician who was called to relieve this condition injected 18 ounces of a 1 in 60 solution, representing 144 grains of carbolic acid and warm water. A few minutes were occupied in administering the injection, during which the child felt no pain; but while the enema was being retained by pressure the child's head dropped on one side, and there was a state of complete collapse, and it remained unconscious for six hours, with total loss of reflex power. Artificial respiration, the battery, injections of oil and of milk, and twice of ammonia, were employed until some reflex action was induced. Four hours later the child became conscious and partook of liquid food, but five and a half hours later still—that is, fifteen hours and a half after the administration of the enema—the child died in convulsions. Three or four attacks occurred, which were not violent or prolonged. There was no post-mortem held, and the physician was found guilty of causing death by a rash and negligent act.

Sponge Grafting.—Dr. de Lautour, in the *Australian Medical Journal*, gives a case of a severe burn in a child of four years, where a thick band of cica-

tricial tissue extended across the back of the knuckles, across the thumb, extending far down and also up above the wrist. The hand was bent backwards, and the fingers back on the hand, and the thumb dislocated backwards. He divided the cicatrix at intervals of one-half to three-quarters of an inch (the cicatrix was generally the thickness of the little finger), and dissected up a little from the bottom of each incision, so as to loosen the cicatrix. The dislocation was then easily reducible, and the hand and fingers easily brought into their natural position. A splint was applied to the palmar surface, retaining the parts normally, and there was a gap in each incision of about one-half an inch. In each of these gaps he fitted a piece of sponge (fine Turkey sponge, washed in a solution of iodine, then of salicylic acid and borax, and then in a solution of salicylate of soda), allowing the sponge to overlap, in order to provide for possible shrinking. The sponge was retained in place by strips of salicylated isinglass silk plaster, and the whole dressed with dry lint, on which was spread an ointment of eucalyptus oil and vaseline, ʒi to ʒi. The grafts adhered, the granulations grew through the sponge; there was some suppuration, the granulations as they grew pushing out the discharge in front of them. They ultimately enclosed the sponge, and a new cicatrix grew over the top, leaving an elongated cicatrix and the thumb in its natural condition. Nine months later the original cicatrix had somewhat contracted, and the grafts show quite distinct from the plain fibrous band. In commenting on his case, Dr. de Lautour expressed it as his intention in his next case of enucleation of the eye-ball, after removing the eye-ball, to insert a piece of sponge within the capsule of Tenon, and stitch the conjunctiva over it, as calculated to make an excellent stump.

OBSTRUCTION OF THE BOWELS; FÆCAL VOMITING: RECOVERY.—Mr. George R. Fraser, L.R.C.P.E., of Wark-on-Tyne, Northumberland, writes:

"On April 11, at 10 P.M., I was hurriedly sent for to visit a lady, aged about 45, who was said to be suffering from 'cramps of the stomach.' She was in bed, vomiting frequently, and complained of intense pain of the stomach and bowels. Her pulse was little affected, her tongue clean, her temperature normal, and her bowels had been freely moved twenty-four hours previously, after the use of aperient medicine. I prescribed bismuth with hydrocyanic acid, and also a full dose of tincture of opium, under the impression of having to deal with a case of acute gastralgia. The treatment had no marked effect, for, upon visiting her five hours after, I found she had passed a restless and sleepless night. The pain was sometimes acute, and the nausea and vomiting recurred frequently. I was shown a hand-basin containing upwards of a pint of distinctly fæcal material which she had just vomited, and her breath had also a strongly fæcal odor. The real nature of the case was now apparent. On careful examination I could ascertain no cause of strangulation; no external hernia, nothing abnormal within reach by the rectum, and no abdominal tumor existed, and fæcal impaction could not be looked upon as probable. Copious injections failed to bring a trace of fæcal matter from the bowels, and only served to show that obstruction was complete. The abdomen was distended, and the pain, as already noticed, often most severe. The early appearance of fœcal vomit was remarkable. In all the circumstances I ascribed the symptoms to a twist, or to an intussusception at some point in the course of the small intestines. If due to intussusception, might not the purgative taken by the patient have had something to do with its production? We know that invagination is apt to arise from causes that produce increased irritability of the bowel. The stercoraceous vomit enabled me to form an early diagnosis, a point of the greatest moment in these cases, as it enables us to adopt a rational course of treatment. Better leave such cases entirely to nature, than administer a single dose of drastic medicine. No time was lost in placing the patient under the influence of opium. The drug was given as tincture, but generally in the form of powder, frequently repeated and continued throughout the attack; and no food of any kind was taken, for which, indeed, the patient expressed no desire. Ice was not procurable, but cold spring-water and soda-water were enjoyed in small quantities, frequently repeated to allay thirst. The effect of the opiate was soon apparent. Vomiting became less frequent, no doubt from the influence of the drug in controlling intestinal peristalsis, and the patient became comparatively easy and had some rest. The characteristic vomit continued to recur at much longer intervals. Occasionally the rejected material was merely a greenish fluid, consisting, no doubt, of the water swallowed mixed with bile. The symptoms were now less acute, but distension increased. Warm fomentations were constantly applied, and injections given occasionally. On the third day she was seen in consultation by Dr. Ridley, of Gateshead, who suggested operative means, or at least tapping, for the purpose of relieving the tympanites, which was now becoming extreme, and that possibly the bowel might right itself. Her friends, however, were averse to any form of surgical interference; and the treatment was continued as hitherto, with the addition of nutritive enemata, and the free use of belladonna liniment to the abdomen, as recommended by Dr. Ridley. The opiate maintained its soothing influence, but the symptoms became more urgent. Hiccough was constant in the evening; tongue red and dry; pulse 134; temperature not taken. She had another good night, and in the morning looked decidedly better than on the previous evening. She had two attacks of fæcal vomiting during the day, but rested well. It was now the fifth morning, and the last upon which sickness and stercoraceous vomit appeared. Her pulse was good, and her expression cheerful. In the afternoon she informed me that 'something had liberated itself in her inside,' and that she was passing wind since I saw her last. A liquid motion followed soon after from the bowels, which contained a few firmer pieces of fæces of the size of hazel-nuts. From this date her improvement was uninterrupted. She soon regained her

usual health, and has since remained perfectly well.

"Invaginations are said to be of frequent occurrence, giving rise to temporary derangement of the bowel, and they are also believed to become soon disentangled by the normal peristaltic movements. If this were a case in point, the favorable result was probably due to the free use of opium. Had purgatives been used fatal strangulation would, I think, have inevitably supervened. A timely diagnosis would render the purely medical treatment of these cases more successful than it has hitherto been."—*British Medical Journal.*

Galium Aparine as a Remedy for Chronic Ulcers.—Dr. F. J. B. Quinlan, M.D., Dubl., F.K.Q.C.P., Physician to St. Vincent's Hospital, Dublin, has treated cases of chronic ulcer with great success, by means of poultices made from "Cleaver's" (*galium aparine*). Respecting a very bad case of senile ulcer, Dr. Quinlan writes: "We had now come nearly to the end of April, and our failure in this case was complete. It appeared to me that now was the time to try the galium aparine, which was beginning to peep out in all the hedgerows about Dublin. An ample supply for this and other less severe cases has since been kept up, and it has been used with the most marked success in the following manner. Grasping in the left hand a bundle of ten or twelve stalks, with a scissors held in the right hand, the bundle is cut into junks about half an inch long. These are thrown into a mortar, and pounded into a paste. This paste, which has an acrid taste and slightly acrid smell, is made up into a large poultice, applied to the ulcer, and secured with a bandage. It is renewed three times a day. Its action appears to be a slight steady stimulant, and powerful promoter of healthy granulation. Its effect in this most unhopeful case was decisive and plain to all. Healthy action ensued, and has since steadily continued; and, after a month of treatment, both ulcers have been reduced to considerably less than half their original size. If this action continue, which I have no reason to doubt, the cure will be accomplished within a measurable and short period. The patient is in the ward, and anyone can see the great amount of new dermatisation which has been effected during the month." Dr. Quinlan was equally successful in several other cases. He continues:

"A difficulty at once suggests itself as to its general employment; viz., that in winter and spring it is not to be had at all. It appears to me that this difficulty can be effectually met by the method of ensilage, by means of which green food for cattle has, for the last few years, been kept perfectly sweet and fresh by burying it in silos under the ground. This plan is generally known, but all particulars about it can be learned in the pamphlet of Mr. Thomas Christy, F.L.S. (Christy and Co., 155 Fenchurch Street, London, E. C.). In the case of the galium, the process would consist of cutting the herb very fine, ramming it down by screw-pressure into a glazed earthenware jar with an air-tight cover, and burying it in the ground. Thus secured from air, moisture, and heat, it would be likely to keep through the winter. One of my pupils, Mr. M. Pierce, has already laid it thus down, and will report the result to me. This plan, if successful, might be extended to other pharmaceutical herbs; for I have always had the idea that green herbs are more powerful than dried ones. Indeed, the late Mr. Donovan, of this city, used to maintain that, to make tincture of digitalis properly, the alcohol should be brought to where the foxglove was growing, and the live plant plunged into it.—*British Medical Journal.*

Puerperal Affections of Mother and Child.—The transmission of puerperal affections from mother to child through the milk seems to be shown in a striking manner in this paper. Dr. Gaulard first discusses a case where a puerperal affection is the result of exposure to erysipelas, and secondly a case where puerperal lymphangitis gives rise to erysipelas. The first case is of a woman confined by the doctor while attending a number of cases of facial erysipelas. Eight days after her confinement she is seized with symptoms indicative of puerperal uterine lymphangitis, which results in an abscess of the broad ligament, which discharges itself through the rectum. The second case was taken a few days after confinement with symptoms of puerperal lymphangitis, but continued to nurse her child, which appeared healthy with the exception of a redness of the eyelids, for which slightly astringent lotions were used to prevent a possible invasion of ophthalmia. The umbilicus did not cicatrize, and very shortly an erysipelatous redness invaded the pubic region, scrotum, thighs, legs, feet, buttocks, and lumbar region, not at any time passing beyond the umbilicus. The child at the same time suffered from fever, insomnia and diarrhœa. The scrotum, which was affected by some effusion into the tunica vaginalis, became darker, and finally sphacelated—the slough separated, leaving a bare wound, which took on a healthy appearance. The child took the breast with avidity, but soon vomited all the milk taken in; the diarrhœa became very frequent, and the stools of a very unhealthy nature, so that it was decided to take the child from the mother and give her to another nurse, when all of these symptoms disappeared rapidly. The mother was allowed to give her breast to the nurse's child, an infant of four or five months, vigorous, healthy. It soon took on this marked redness in different parts of the body, of a fugitive nature, appearing and disappearing suddenly in one or the other region, without the general health being apparently affected. The mother's milk examined carefully presented nothing abnormal, and the child, after entire recovery, was returned to its mother's breast, who nourished it satisfactorily.—Gaulard. *Bulletin Médical du Nord. Mars.* 1883.

Imperforate Urethra.—Male child; aged thirty-six hours; position of meatus well marked; sexual organs well formed. A stylet failed to find the canal; puncture of the bladder at the pubes caused the discharge of about two ounces of urine. It was found necessary to make an exploratory incision on the inferior surface of the penis to search for the canal, which was supposed to be obliterated near the glans penis.—M. Folet, Soc. Cent. de Med. du dipr. du Nord, *Bulletin Médical du Nord.*

THE

Journal of American Medical Association.

PUBLISHED WEEKLY.

THE EDITOR of this JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information, should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, AUGUST 11, 1883.

LOST MEMBERSHIP.

EDITOR OF THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

What has been the course of the Association in the case of members who have failed to keep dues paid up? Does payment for one year restore them to active membership, or must all arrears be paid? Will subscription to THE JOURNAL secure the privileges of membership at the next meeting to a member now in arrears? Respectfully, ——— ———

The foregoing letter of inquiry was received a day or two since, and as the questions it contains have been asked many times during the past year, we think it may be profitable to give them a public answer. The course of the officers of the Association in relation to members not paying their annual dues, is clearly defined by the following provisions of the constitution and by-laws: "Any permanent member who shall *fail* to *pay* his annual dues for *three successive years*, unless absent from the country, shall be dropped from the roll of permanent members, after having been notified by the Secretary of the forfeiture of his membership." Any member in arrears for a period of not more than *three years*, can retain his membership, by paying to the Treasurer the *whole amount* due. When one has been a member and has allowed his dues to remain unpaid more than three consecutive years, and has received *notice* from the Secretary, that his membership in the Association is *forfeited*, there is no provision in either constitution or by-laws for his reinstatement by paying any amount of previously unpaid dues.

On the contrary, having forfeited his membership and received official notice of the fact from the Secretary, he is in the same position as though he had never been a member. The only way for him to regain membership, is, to obtain from his State or local Society an election as delegate, attend the annual meeting of the Association and register as a new member. Simply subscribing for the journal of the Association does not secure any privileges of membership in the meetings of that organization.

ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.—The fifty-first annual meeting of this Association was held in accordance with the previously published programme, in Liverpool, from July 31 to August 3, inclusive. The *New York Medical Record* of August 4 contains a very brief abstract of the proceedings, received by cable dispatch. The meeting is represented to have been largely attended, and the work done in the several Sections varied and important. Among the guests in attendance from other countries was Dr. Austin Flint, Sr., President of the American Medical Association, who was received with great cordiality. In a letter from him, dated July 4, he expressed much interest in the current year's work of our own National Association and its culmination at the next annual meeting in Washington. He will soon be home, and, if his efforts are promptly sustained by the officers of Sections and prominent members of the profession throughout the country, the next meeting will show an amount and quality of work which will bear favorable comparison with the work of any of the national medical organizations of Europe.

YELLOW FEVER AND CHOLERA.—No evidence has come to hand that either of these diseases have made advances, or appeared in new places since the previous issue of this journal, and there is a strong probability that the latter will not extend beyond its present boundaries this season. Should the remainder of this month and September be accompanied by unusually high temperature, in the South Atlantic and Gulf States, there will be more danger of the occurrence of yellow fever, in spite of the most vigilant quarantine influences.

DISTANT APPOINTMENT. — We learn that Dr. Charles Fremont Dight, Assistant to the Chair of Pathology and Practice of Medicine in the University of Michigan, has been elected Professor of Anatomy and Physiology in the Medical College at Beirut, Syria, in Asia. He is expected to enter upon

his work the coming autumn. He is now visiting the principal medical centers of Europe. We wish him long life and much usefulness.

NECROLOGICAL REPORT.—Dr. Toner, Chairman of the Standing Committee on Necrology, presented to the recent meeting of the Association a voluminous report. To prevent absorbing too much space with that kind of reading in any one number of THE JOURNAL, we have thought it better to give a few of the Biographical Sketches in each number.

CORRESPONDENCE.

OPIUM POISONING.

EDITOR JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

The treatment of opium poisoning by atropine has been too long and successfully practiced to need the support of any new clinical facts, still there are modifications of the treatment which may merit notice, inasmuch as it does not always happen in emergencies of this class, which the physician is called upon to meet, that he finds a salt of atropia accessible. In such cases he is not without resources if his pocket medicine case is ordinarily well equipped.

A few days ago a two-days-old baby was given one-fourth grain of morphine by mistake. I saw it nine hours later, when at first sight, it seemed to be dead, as the friends believed it to be. Deeply cyanotic, it showed no sign of respiration, and the pulse at the wrist was absent, as indeed it remained, except at short intervals, for many hours.

Having no atropine, I immediately injected subcutaneously five minims of tr. belladonna, followed by an equal amount a few minutes later. By my direction an infusion of coffee was prepared, containing two tablespoonfuls to the cup, which was given hypodermically, a syringeful every ten or fifteen minutes. Within half an hour the worst of the cyanosis had disappeared. A pulse came temporarily to the wrist still earlier; respiration came with gasps, although wide apart. The contracted pupil dilated to more than its normal size, remaining so for three hours, when it began to contract again. The belladonna was then used as before, with a drop of digitalis, as the pulse was again absent from the wrist. As before, both pupil and pulse responded, and all symptoms improved, but an hour later the injection was repeated. Coffee was given subcutaneously throughout the day; artificial respiration was kept up when cyanosis returned, as it did many times, and frequent chafing of the extremities.

By midnight it was quite sure that the child would recover, but consciousness did not return until noon the next day, forty hours after the morphine was given.

I have questioned whether in this case the tincture of belladonna did not serve a better purpose than the atropine would have done, adding to its antidotal effect that of a stimulant to the heart, which seemed needed quite as much as anything else. Undoubtedly not a little of the final and unexpected result was to be attributed to the other means employed, but they are to be regarded only as important auxiliaries, the most striking results having been attained before they were employed. J. R. BARNETT.

Neenah, Wis., Aug. 9, 1883.

CINCINNATI LETTER.

[For THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.]

It has been the intention of your correspondent to have written ere this, and now fully agrees with Perseus, when he wrote:

> "Unhappy he who does his work adjourn,
> And to to-morrow would the search delay,
> His lazy morrow will be like to-day."

From day to day has this pastime been adjourned only to find it much more easy to do so on the morrow. True, there has been little to write about. We are having a remarkably quiet summer and very little sickness. A cynic at my elbow claims that it is on account of so many of the profession being out of town; it remains to be seen whether that theory is any ways good when our new Board of Health is under full headway. Our Democratic council mortgaged itself by selecting a Board, composed of five saloon-keepers and an advertising, so-called, doctor —all solid Democrats,—and they have likewise shed a halo around their august body by selecting an old-time politician, a chronic place-seeker, who at one time was in the lumber business, as the Health Officer. I should say that, for appearance sake, they did offer the position to that valuable statistician, physician, and gentleman, Dr. Thomas Minor, knowing full well that he would decline. Dr. Minor had the office once, a few years since, much to his regret, as his private business suffered considerably, though he won golden laurels in the estimation of the public for the thorough manner in which he performed the duties of the office. His annual reports were models, and are frequently quoted to-day. The present Board is illegal. The Superior Court was authorized by the Legislature to appoint a Board, but through some delicate question in their (the lawyers') code, they declined. We are anxiously awaiting the meeting of the Legislature, when the guillotine will fall and the Board will be gracefully cremated. In the meantime we stand with bated breath and scan the mortality reports. So far there has been no marked increase over this time last year.

New York, it is noted, is to have a crematory furnace. Not to be behind our Eastern brothers, Cincinnati, too, is taking the initiatory steps towards having one. Cremation is growing in favor fast here, partly on the score of economy, but principally on that of health. Like all reforms, it has its strong advocates and strong adversaries, the latter are in the minority, however, and no doubt before many years the ceremony will be thought nothing more of than the ordinary funeral of to-day, with its long array of carriages, flowers, and costly

casket. There was the reverse of that, however, in the funeral of Dr. Jno. A. Warder, who died at his suburban home a few weeks since of paralysis. He was a member of the Society of Friends, and had always believed the practice of that body in its simplicity in all things should be lived up to, and so directed for his own funeral. A coffin the plainest of the plain, a ceremony after the form of his religious society, private in nature, the family only being present; a funeral cortege consisting of a wagon and one carriage, the rest of the family coming to the city by train, and meeting the remains at the cemetery, where the burial was privately held. It caused some comment by some of the members of the Forestry Association, and of course they had to rush to the daily press, as they were foiled in the effort to palm off a lot of set speeches, that would be asked to go for orations. If a few more men of the ability and standing of Dr. Warder would follow his example, and their families show the same good sense as his did, all this "pomp and circumstance" of the last rites of the dead, which in the main is show, would be materially done away with, as it is hoped cremation will assist in.

The new JOURNAL, as the organ of the American Medical Association, is well received here. It starts out well, and hopes are entertained that when the wheels are all well oiled smooth running will be enjoyed. There is certainly one advantage; you cau have it bound in any form and colored binding yon wish, by that means giving some "life" to your library, and not be compelled, as heretofore, to accept the transactions in black, making your shelves look like the inside of a mortuary, that mournfnl color predominating to such an extent.

We were highly gratified and edified to have the American Surgical Association meet here some few weeks since. Much good work was done, and we felt highly complimented to think we should have such a distinguished body among us. We have had nothing of the kind since 1867, when the American Medical Association met here. There was so much hilarity on that occasion—"Old Crow," "Amontillado," "Vino de Pasto," to say nothing of "Pommery Sec."—(which caused a good many hicks)—flowing like water; that there was no opportunity for any person to read a paper. There were several commenced, but soon a motion was made to adjourn, as the Association had an invitation to visit a famous wine cellar—a steamboat ride—a reception, or something else of a like nature. As that motion was always in order, the reader would have to stop and hear it carried, while there was nothing for him to do, but to look amiable over the disappointment in not having the opportunity to give the members the results of six months work in preparing his paper, and hand it over to the Publication Committee, to appear in somber hued transactions without discussion. Never since that date, have there been enough votes in the Executive Committee to have that Convention come among us again. There was more hospitality than meeting, but that was on account of our being so near Kentucky, and while we are proud of our hospitable name, we would like to show some of the members, who have found since then what we can do, and those who met with us before, how we are able to extend a welcome now. We will guarantee a royal time. The ladies are prettier; the houses finer; the suburbs more beautiful; the attractions in the city and the doctors more numerous—to make no mention of what can be done in a musical line; or what can be shown in the way of hospitals and medical schools. If we were complimented in having the Surgical Society here, you may rest assured, we were chagrined at the silent manner in which they were treated by that "Great American Medical Compiler," published once a week here—*not one word was made mention of their sessions.* Various theories were advanced, but nothing definite was known until "*The Clinical Brief and Sanitary News*," a monthly for July, comes with an editorial explanation. The editor takes the "two leading editorials from the *Lancet and Clinic*, of June 9," one of which is on how "catgut ligatures are falling in the estimation of surgeons," occupying four lines. The other is a "correction," in which three lines of their valuable space is occupied—commenting on the above. The editor of the "*Brief*," says:—"The importance of the above editorials, added to the fact that the editorial space in the *C. L.* and *C.*, is limited, we trust will be accepted by the distinguished surgeons from all parts of the United States, who have been in convention assembled in this city for a number of days, and have just adjourned, as ample apology for the non-appearance of any notice of their proceedings. There is also this apology: Had the Convention held its meetings in the hall over the office of the *Cincinnati Lancet and Clinic*, and not in College Hall, reports might have been prepared, and space for their publication found, but as it was, the Convention was too far away. The next meeting of the surgeons in this city should be held in Brother Culbertson's hall. We desire to benefit Brother Culbertson, and admonish the surgeons."

Some of our experts with the microscope anticipate much pleasure and profit in visiting your friendly city to attend the American Society of Microscopists. One member expects to take some beautifully prepared specimens of the present rage, "the bacilli."

The different medical schools here have out their new announcements—each trying to outdo the others, at least it has that appearance to one on the outside. The Miamis have at last awakened to the fact that it might be to the advantage of their school to have some young life in the Faculty, and consequently have recognized the ability of some of the graduates who have been in practice a few years, by giving them subordinate positions, with big promises—it remains to be seen whether or no they make them good. There is a general impression that the transfusion of "new blood" has been performed so late that it is hardly possible to aid in the desired resuscitation. They met with an irreparable loss when Prof. William H. Mussey, their National man, was taken from them by death, now nearly a year ago. The restrictions of the Association of Colleges were more than they wanted to stand; so they kicked over the traces, dashboard and all, and are now out entirely, eating husks and pray-

ing for richer pasturage. The Ohios have the lead, as they have had for many years. There is lots of push and energy in the executive officers and Faculty, and they spare no expense to matriculate the student, and more than give him his money's worth in the way of clinical advantages. The dean complimented the new college, or rather the new Faculty of the old, Cincinnati College of Medicine and Surgery not long since, by expressing fears that they (the Ohios) would find them (the Cincinnatis) "a thorn in their sides," or words to that effect, as "they now had a new, hard-working, harmonious Faculty, who would make themselves heard from." The last session—which was the 48th since the college was organized—the first under the new Faculty, certainly looks as though they would be a splinter of some magnitude in the pectoral muscles of the other schools. There is one paragraph in their announcement which reads:

"Believing that without purity of character no one should receive a passport to the sick-room, the Faculty will refuse to recommend any candidate for graduation whose moral character is under a cloud, and the Trustees will publicly revoke the diploma of any graduate of this institution who may be convicted of using his profession for criminal purposes."

This certainly speaks well for the new Faculty, and is worthy of commendation. They took charge of an institution that was in the "slough of despair," and by their lives and acts are regenerating it with a rapidity that is phenomenal.

Drs. Dawson and Whittaker, who have both suffered the severe pangs of grief in losing their wives recently, are, with many others of the profession, out of the city. But this must close, or there will be nothing left for my next. PROTOXIDE.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

The Chicago Medical Society held a regular meeting July 16, at which time Dr. H. D. Valin read a paper of much scientific interest, on "Mechanical Equivalent of Animal Heat," and forming part of a manual of biology which he is writing. It gave the normal temperatures of various species of cold and warm-blooded animals, of certain plants which possess a temperature of their own, of hybernating animals, and referred sleep to certain changes of temperature. The relation of heat to growth was considered one of correlation, though not one of causation, as Carpenter had suggested. The slight effect of heat on proto-organisms, and its powerful absorption by mammals, was referred to the elementary composition of each, etc., Dr. Valin's theory being that heat absorption increased as the atomatic weight of the elements exposed to the heat, and that the higher animals contained more of the heavier salts. He also believed that radiant heat became animal motion in the organism, though the larger part of animal motion resulted from oxidation, or combustion of food. The mechanical equivalent of heat, as calculated by Dr. J. R. Mayer, and ascertained by Joule, was stated, but that was no longer the unit in use. The unit now taken as the standard was 425 kilogrammeters, which is equivalent to a kilogram of water heated one degree C., or raised 425 meters high. This, in English figures, was a pound of water raised one degree C. The heat units of various substances in combustion were then stated, and the writer claimed an inverse ratio between these numbers and the atomic weight of the substances. The experiments of Hirn on human power of work were given, by which it was shown that man at work consumes five times as much oxygen as during rest; that it requires the combustion of 9 ounces of carbon in the human body to maintain work and life for 24 hours, and that a unit of heat is produced by man in 15 seconds, while a unit of heat in man required the combustion of 11 grains of coal, in an engine it required 9½, and in the open air the same quantity of heat resulted from the combustion of 2½ grains of charcoal. The views peculiar to Dr. Valin were that the adipose tissue was the coal-bin of the human engine, and should not be allowed to accumulate unduly, but be reduced by active work in order to maintain health; that vitality was proportioned to the height of the temperature in any organism; that the heat of certain fevers often appeared as mechanical work in the form of violent delirium, and then was no longer appreciable as heat; that the endurance of cold was a mechanical work in the body which generated an equivalent of heat; and that active bodily work abstracted heat from the body, and quieted the mind in mania. But as the machinery of an engine becomes heated by friction and the furnace by contact, so human temperature rises a degree during work, and that was a measure of the work done. A rise of temperature in the brain most likely would give an index of the mechanical work of thought, but this was more easily measured by the plethysmograph, which records the increase of the circulation in the brain during thought.

Dr. W. L. Axford read "notes" of a case of bi-lateral dislocation forward of the fourth cervical vertebra, that had fallen under his care. The accident occurred in the month of March, 1883, to a little girl 8 years of age. The extent of the dislocation was ⅔ of an inch, and no fracture occurred, nor was there any injury to the cord. Drs. E. Andrews and J. G. Kiernan had seen the case, and verified the diagnosis. During the past six months the child had made almost a perfect recovery. The treatment consisted in the "let alone" method.

At no time were there marked paralytic symptoms, but the rotary movements of the head were somewhat interfered with, and the head was thrown forward and had assumed a more fixed position.

Dr. C. T. Fenn reported a case of "Acute Hepatic Abscess," with *Mistaken Diagnosis, Free Opening, Death, Autopsy*, occurring in a boy 14 years of age. It is related that two years ago he received a kick of a horse over his right side, his forearm intervened, and the injury caused him no serious trouble at the time, although he fainted, and ever since he had been subject to pains in the side. He had been an ap-

prentice in a blacksmith shop, and on June 19, 1883, quit work, complaining of headache and pain in his right side, and suffering from "cold." On the second day he had a feverish pulse, hot skin, bad odor to his breath, coated tongue, pain in his head, neck and limbs, and especially under the right breast. Gave tr. opii deodor., kali chlaursaures in glycerine, and aqua distil, and at night applied emp. cantharis 4x5 to the right side across and above the short ribs. On the third day the fetor was corrected, the pain in the side gone, but thirst and headache, and the tongue remained the same; tympanitis, with rapid pulse, high temperature, and a tendency to cough, which would cause pain in his side, were present. On the fourth day he uttered a slight cough with every breath. There was decided flatness over (as Dr. F. thought) the lower lobe of the right lung, extending from the nipple downward. Poultices were applied from this time continually. Tympanitis and perceptible bulging of the right side were noticed. Constant rest on his back caused extreme discomfort, with perceptible shortening of the breath. On the fifth, sixth, and seventh days the temperature of the body was high, the pulse over 100 during the day, with an increase at night. No tendency to any movement of the bowels. The urine is somewhat darker than normal, but skin and conjunctiva unaffected. Patient had to sit up to obtain rest from the pain of lying so long on his back. In this position the heart was noticed beating between the second and third ribs. Dullness on the right side extended to one and a half inches above the nipple. The cough is still somewhat troublesome, but by using salicylate of soda it seemingly now is beginning to subside. There is a dark, moist coat upon the tongue; has marked thirst; tympanitis, with no movement of the bowels. Large enemæ being introduced daily, were retained. He loathed beef tea, but found satisfaction in tea, coffee and lemonade. On the eighth, ninth, tenth and eleventh days the treatment consisted of anodynes, nutriment and poultices. On one of those days he evacuated the bowels copiously, the contents being dark, thin and offensive. The tongue cleaned, and remained so. On the twelfth day the patient appeared much improved. The lateral fullness was reduced. He slept and ate with evident benefit. We discontinued the poultices, and he sat for most of the time in his chair by day. On the fourteenth day he grew worse—the dullness which had been lowering in his side increased to its former stand. He perspired freely, and it was quite disagreeable; had chills and exacerbations of fever at night. On the fifteenth day Dr. D. T. Nelson was invited to see him, for the purpose of assisting in surgical interference, should the diagnosis be confirmed, which was "pleurisy, with effusion." Dr. Nelson used the aspirator at a point about a third of the way from the median line, in front, to the spine, and between the eighth and ninth ribs. Pus was directly perceived, and a free opening was made, followed by a copious, sluggish stream of offensive matter. A drainage tube was inserted, and the opening was dressed with cotton, soaked in carbolized glycerine. Before this was done, however, a finger was introduced directly into the wound, and there were discovered smooth, soft walls, apparently held together by strong trabeculæ. From position of the opening it was concluded the lung was broken down at the site of the large abscess. The prognosis was looked upon as almost hopeless, considering the rapid development. The amount of fluid which escaped at the time of the operation and during the night was at least a pint. On the sixteenth day he was greatly relieved. The cavity was washed freely with carbolized water, which was returned almost clean. Slept well the two nights following. Eighteenth day, the external wound was clean and dry; the carbolized water could be injected five or six inches and immediately be returned almost clean. Reasoning on the assumption that this had been an abscess of the right lung, I thought it quite strange that the only constitutional symptoms were those of septicæmia. The internal treatment was tonic, sustaining, fever mixtures, expectorant and anodyne. By the twenty-first day, as the chills had recurred, with bad nights, extreme heat, and the attempts at cleansing the interior were unsatisfactory, and thinking what new resort to undertake, the patient was seized with a rigor on the twenty-second day, from which he did not rally, and died.

Autopsy twelve hours after death. Body had been surrounded by ice; was distended, and purple appearance of face, neck, chest and abdomen as if decomposition was quite advanced. Incision from top of sternum to three inches below umbilicus exposed contents of the chest. The lungs were both found to be healthy, and crowded up to occupy but half their normal space. The heart was beneath the second and third ribs. The liver extended across the body on a line above the level of the nipples. The stomach and intestines were inflated with gas and aided in forcing the liver higher up. The opening to the abscess was directly over the thickest portion of the liver, and about one-third of the organ seemed to be involved; the rest appeared healthy. The peritoneum was not inflamed. The spleen was softened. No other observations were made, and it was not easy to see how the abscess had its origin. Could it be traceable to the injury received two years ago, and then acute symptoms of three weeks' standing arise?

Dr. W. H. Curtis asked the author of the paper if diarrhœa had been present any time preceding his sickness? Answered, No.

Dr. D. R. Brower asked if any jaundice was present during the patient's illness. Answered, No, but immediately after death the surface turned yellow.

Dr. L. H. Montgomery inquired of Dr. Fenn what the difference in the treatment would have been had the diagnosis of the case proved to be an abscess of the liver? Answered, None, and this was one of the reasons why the case was reported to-night, as well as its comparative rareness.

Dr. W. L. Axford asked if the edges of the liver had grown to the walls of the abdomen? Answered negatively.

Dr. H. D. Valin remarked that one year ago he saw a case of hepatic abscess. Twelve years previously the patient (a man), had malaria. There was no diarrhœa, but decided motion of the heart was

noticed. There was no jaundice. The inflammation was of nine to eleven days duration, when 8 ozs. of pus were evacuated by an opening into the abscess. In two weeks the patient recovered.

Dr. Curtis had met four cases of abscess of the liver, which is not of frequent occurrence in the temperate zone. In brief, they are as follows: The first was an Indian boy, who was taken sick and the abscess pointed to the ribs. A free incision was made, and a knotted lump of lumbricoid worms (large as a man's fist), was first discharged. Then offensive pus followed. The wound was cleansed thoroughly for several days and the boy recovered. In this case the lumbricoides was the cause of the abscess.

Second case occurred in a chronic drunkard who had chronic liver trouble. The man sickened, and a diagnosis of an abscess of the liver was made. A free opening in his side by the knife resulted in the abscess discharging itself. Adhesions to the walls of the abdomen were found. Recovered.

Third case occurred in a women 62 years old. She had marked jaundice, and marked symptoms of septicæmia, and in two weeks purpura set in. The abscess ruptured into the lung and she expectorated pus freely. She rallied and partly convalesced, but chills and fever supervened and her life was despaired of. It, however, gave away again into the stomach, and a large quantity of pus was vomited, when she finally recovered. At 16 years of age, an incision was made in her right side, from which a number of gall stones were removed, and the cicatrix still exists.

Fourth case: Railroad president. Had been under his care for ten days, when he proposed aspiration, but his friends concluded to take him to New York for further advice. This was accordingly done, and there operated upon in the same manner, resulting in recovery.

Dr. A. R. Brower presented a heart having the following lesion:

The case was one of endo-carditis, with roughening of the mitral valve, and no murmur was present when the patient (a woman), was alive. The endocardial trouble began with a puerperal fever of a year previous. The valve was perfectly sufficient is the reason why there was no murmur. Had it been insufficient a murmur would have been discovered. An embolism had formed, but with the stethoscope no possible abnormal condition of the heart could be detected. She also had chorea, and great shortness of breath. No murmur could be detected after exercise, or after laboring under excitement. The patient was anæmic and emaciated. Thinks it rare to find on record a case of mitral lesion, as this case is, and with the other conditions, and no murmur to be heard.

REPORT OF PROCEEDINGS OF THE AMERICAN SOCIETY OF MICROSCOPISTS IN CHICAGO, BEGINNING AUGUST 7, 1883.

The first session of the sixth annual meeting of the Society began Tuesday morning, with an address of welcome by Prof. Lester Curtis, President of the Illinois State Microscopical Society, and a response by Prof. McCalla, of Fairfield, Iowa, President of the American Society of Microscopists. The annual report showed the condition of the Society to be encouraging, and called attention to the important papers which had been prepared for the present meeting. The Executive Committee, through Prof. D. S. Kellicott, of Buffalo, N. Y., Secretary of the Society, recommended the election to membership of fifty persons. These persons, together with about fifty more who were chosen at later sessions, materially increase the strength of the Society.

After discussion a motion was passed, which provides that hereafter no one shall be elected a member unless the admission fee of $3 and the annual tax of $2 accompany the application.

The offer of the Chicago *Times* to publish a complete report of the meeting was accepted.

It was decided to amend the by-laws so that hereafter papers accepted by the Society may be published in any reputable journal, provided that credit be given to the Society.

In the afternoon session Dr. F. M. Hamlin, of Auburn, N. Y., read a paper on

THE MICROSCOPICAL EXAMINATION OF SEMINAL STAINS.

The ordinary method of examination, essentially that of Koblauck, which consists in soaking the stained cloth or object in water and examining the sediment deposited from the water, has led to such poor results that Dr. Hamlin has discovered and recommends the following method: A small piece of the suspected cloth about an eighth of an inch square, is placed on a slide moistened with water, and after soaking a short time a cover is applied. In the case of cotton, the ends should be frayed, and with colored woolen stuffs the suspected parts should be scraped off with a knife. Hairs may be cut off and examined in the same way, but care must be used not to lose the crust which contains the sperms. They will be seen in all cases between the meshes of fibres, or clinging to the threads or hairs, and successive examinations of different portions will reveal any if present. The superiority of this method to the common one is well shown by comparing the results obtained by treating a known stain in both ways. The frequent failure of the ordinary method is probably due to the breaking down of the fragile spermatozoa when the embedding crust is dissolved. The specimens may be temporarily preserved by ringing them, and probably by the use of carbolic acid they may be kept for a long time.

In the discussion of the paper, Dr. Henry Gradle, of Chicago, stated that he had frequently stained spermatozoa in the same way as he stained bacteria. When seeking for them in urine he dries a drop on a cover glass and stains with an aniline color. By successively adding drops and drying he increases the chance of finding the germs when few in number. He has found that they readily take up aniline colors.

A well written paper by Prof. Sarah Whiting, of Wellesley College, on

COLLEGE MICROSCOPICAL SOCIETIES,

was next read. The need of such a society in a college, and the means for making it a success, were

clearly given, and then followed a description of the origin and management of the successful Wellesley College Society.

Next followed a paper by Prof. S. H. Gage, of Cornell University, on

CATALOGUING, TABLEING AND STORING MICROSCOPICAL SPECIMENS.

The value of a complete catalogue was emphasized, and the advantages of the card catalogue adopted at Cornell were pointed out. The following formula will indicate what is desirable for convenience and completeness:

Formula for Cataloguing Microscopical Preparations.—	An Actual Catalogue Card Written According to the Formula.—
1. The general name.	1. Nerve fibers.
2. The number and date of the preparation, and the name of the preparator.	2. No. 31 (Drr. 11), March 21, 1880; S. H. G., preparator.
3. The special name of the preparation; the common and scientific name of the object from which it is derived.	3. Isolated, medulated nerve fibers from the sciatic of the cat (felis domestica).
4. The special object of the preparation.	4. This preparation shows well the axis cylinder and the nodes of Ranvier.
5. The method of hardening, dissociating, etc.	5. Dissociated 24 hours in 25 per cent. alcohol.
6. The special method of preparation for the microscope, viz.: cut into sections, spread, etc.	6. Teased or dissociated on the slide with needles.
7. The staining agent and the time required for staining.	7. Stained over night in picrocarmine.
8. The clearing agent and the mounting medium.	8. Cleaned with turpentine and carbolic acid; mounted in chloroform balsam.
9. The objectives to use in studying the preparation.	9. Use three-fourths and higher objectives (x50x).
10. Remarks, including references to good figures and descriptions.	10. See for figures and descriptions Quain's Anatomy, Vol. II., p. 141, and Ranvier, Traite d'Histologie, p. 723.
Formula for Labeling Microscopical Preparations.—	Label Written According to the Formula —
1. The number and date of the preparation (No. 2 of catalogue).	1. No. 96; 1880.
2 The general name (No. 1 of catalogue.)	2. Nerve fibers.
3. The name of the object from which the preparation is derived.	3. Cat.

Tuesday evening, Prof. McCalla delivered the annual address. The theme chosen was

THE VERIFICATION OF MICROSCOPIC OBSERVATION.

The address consisted in a retrospect of the work of the past, and a statement of the means to be employed to verify the truths of the present and future.

Wednesday morning, Prof. T. J. Burrill, of Champaign, Ill., read a paper on

METHODS OF PREPARING AND MOUNTING BACTERIA.

The elements of successful staining were enumerated as follows:

1. The organisms should be decidedly and conspicuously colored. 2. The general mass of imbedding material should be left unstained, or so different in color that the organisms can be distinctly seen. 3. There should be no granular or other precipitations from the staining material, nor should any portion of the latter remain as a coating on the glass. 4. The color should be suitable for the purposes required, and permanent, if the object is to be mounted for the cabinet. 5. The process should be as simple as possible and free from manipulative difficulties.

The aniline dyes are most serviceable in staining bacteria, and of these dyes methyl violet in aqueous solution is most frequently used. There are two objections to this stain. It is apt to be fleeting, especially if exposed to the light, and alcohol will discharge the color, hence mounting in balsam is impossible. The first may be partly removed by making a deeper stain, and then removing the excess of color by washing. The second objection is best met by using a solution of the violet in glycerine. One part of the dye to five parts of glycerine produces a successful and permanent stain.

Suppose one wants to examine the organisms in his own or any other person's mouth. He may proceed as follows: Secure a little mucus from the tongue or teeth, taking care to avoid the remnants of the last bread and butter enjoyed. Place the substance on a clean glass slip, and if necessary, mix by stirring. Make a little spatula of wood a quarter of an inch wide, and cut square at the end, with which smear a well-cleaned cover glass, after the manner of spreading blood, by drawing the spatula with the material once or twice, side by side, over the desired surface, holding the instrument at 30 or 40 degrees from the horizontal. Dry in the air or with moderate heat; then pass the glass through a flame somewhat quickly three or four times, holding the smeared surface up, and from a bottle, through the cork of which passes a glass rod, put on a drop of the glycerine violet; after one minute or less wash with water by means of a stream from a wash-bottle, and mount while wet for examination, the upper surface being wiped dry. If for permanent preservation, see that the cover glass and stained material are thoroughly dry; then mount directly in pure balsam, or, better in some respects and not so good in others, in Farrant's solution of gum and glycerine. All this can be done without putting the object out of hand, and in a very short time, and our specimen remain fit for the cabinet, or for re-examinations, months and probably years afterward. The use of an alcoholic solution of blue or red aniline would, with the same or similar treatment, be a complete failure, the whole surface, glass and all, remaining smeared with the dye in spite of water washing, and the whole color disappearing with the use of alcohol. With other organisms, as, for instance, the micrococcus of pear blight, the aqueous solutions of red or violet aniline are partially successful, while methyline blue entirely fails, but the strong glycerine solutions of the two former give far better results.

The next hour was to have been occupied by Dr. Detmers, of Champaign, Ill., with a paper on the subject of

PATHOGENIC BACTERIA,

but as the paper was not ready he gave a talk on the same subject, which led to a sharp discussion. Dr. Detmers considered the ordinary classification of bacteria, viz.: that of Cohn, as imperfect, and held that the genus micrococcus should disappear. The forms referred to this genus he believed to be one stage in the development of bacilli or other kinds of bacteria. In other words, a micrococcus has the same relation to a bacterium as a catarpillar has to a butterfly.

He also held that a bacterium may be innocent under certain conditions and harmful under others. He has often found bacteria in his own blood when he was perfectly well, while under other conditions,

when the bacteria were in a different stage of development, they would probably do harm.

It was not to be expected that such views, from one holding so important a position in the government service, presented without evidence, would be accepted without discussion. Dr. Henry Gradle, of Chicago, called attention to the labors and conclusions of Zopf. While acknowledging the reliability of Zopf's experiments, Dr. Gradle considered that the generalization made, namely, that one germ can be changed to another, was unwarranted. The more probable conclusion seemed to be that germs are genetically related as man and the dog are related to the bird in the embryo state.

The next paper was by Dr. G. E. Fell, of Buffalo, N. Y., on

THE CLINICAL ADVANTAGES OF OZONE AND ITS EFFECTS ON BACTERIA.

The author described the practice of Dr. Bartlett, of Buffalo, who has for some time treated zymotic diseases with ozone. The success of this mode of treatment suggested to Dr. Fell a series of experiments to determine the effects of ozone in preventing the growth or destroying the life of germs. The experiments evidently involved considerable labor, but it is doubtful whether the results are of great value on account of ignorance of the labors of others, and inattention to important details. The results were varying; in some cases ozone decreased or destroyed bacterial life, while in others no effect was produced.

The committee on the important subject of

NOMENCLATURE AND SIZES OF OCULARS

presented a report in which they recommended the adoption of the following resolutions:

Resolved, That this society recommends that oculars be named by their equivalent focal distances on the basis of one inch focus corresponding to ten diameters of amplification at ten inches distance, and that this nomenclature be employed in the proceedings of this society.

Resolved, That this society recommends the adoption of the diameter 1.25 inch outside measure as a standard size of ocular tubes, with a preference for 1.35 where larger, and .92 where smaller sizes are required, and recommend 0.75 outside measure for ocular cap tubes, and 1.50 inch measure for substage tubes.

This report was discussed and finally the subject recommitted. At a later session it was brought up, but again referred to the committee to be decided next year.

Wednesday afternoon Dr. G. E. Blackham presented the following resolution, which was adopted:

"In view of the fact that the Royal Microscopical Society of London has seen fit to honor this Society by making its President a fellow of the Royal Society, it seems fitting that there should be some formal recognition on our part of the honor thus conferred by the oldest and most distinguished national microscopical society upon the youngest. I therefore move, first, that the American Society of Microscopists recognize and reciprocate the kindly fraternal feeling shown by the RoyalMicroscopical Society in making our presiding officer an ex-officio fellow; second, that, as a further evidence of appreciation and reciprocal feeling, we hereby elect the President of the Royal Microscopical Society and his successors ex-officio members of the American Microscopical Society."

Prof. W. A. Rogers, of Harvard University, then presented a paper entitled

A CRITICAL STUDY OF THE ACTION OF A DIAMOND IN RULING LINES ON GLASS.

The writer first referred to his theory concerning the method which Nobert may have employed in the production of his test plates. The summary of this theory may be given in his own words:

When a diamond is ground to a knife edge, this edge is still made up of separate crystals, though we may not be able to see them, and a perfect line is obtained only when the ruling is done by a single crystal. When a good knife edge has been obtained the preparation for ruling consists in finding a good crystal. Occasionally excellent ruling crystals are obtained by splitting a diamond in the direction of one or more of the twenty-four cleavage planes which are found in a perfectly-formed crystal. A ruling point formed in this way is, however, very easily broken, and soon wears out. Experience has shown that the best results are obtained by choosing a crystal having one glazed surface and splitting off the opposite face. By grinding this split face a knife edge is formed against the natural face of the diamond, which will remain in good condition for a long time. When a ruling crystal has been found which will produce moderately heavy lines of the finest quality, it is at first generally too sharp for ruling lines finer than 20,000 or 30,000 to the inch, even with the lightest possible pressure of the surface of the glass. But gradually the edges of this cutting crystal wear away by use until at last this particular crystal takes the form of a true knife edge which is parallel with the line of motion of the ruling slide. In other words, when a diamond has been so adjusted as to yield lines of the best character, its ruling qualities improve with use. If Nobert had any so-called "secret," I believe this to have been its substance.

A microscopical study of ruled lines shows that there are different ways in which they may be produced. Ordinarily an opaque groove, which stops the light, is cut by the diamond. Sometimes, however, the particles of glass removed by the diamond are piled up in a window besides the real line. These particles may appear in four characteristic forms: (*a*) They appear as chips scattered over the surface of the glass. (*b*) They appear as particles so minute that when laid upon a window, and forming an apparent line, they can not be separated under the microscope. (*c*) They take the form of filaments when the glass is sufficiently tough for them to be maintained unbroken. (*d*) They take a circular form.

The lines best suited to the work of the microscopist are evidently not of this character. To produce permanently good lines three conditions must be fulfilled. 1. The glass must be tough. 2. The crystal must produce lines which will retain their form after the surface of the glass is rubbed. It

should be remembered that a ruled plate must be cleaned by rubbing only in the direction of the the lines, and never across them. 3. The line must not break down upon the lapse of time.

Passing on to the claims of Mr. Tasoldt, of ruling lines one million to the inch, Prof. Rogers made a sharp distinction between visibility and resolution. In regard to the limit of resolution it must be admitted that no advance has been made since the resolution of Nobert's nineteenth band. It may be possible to go a little beyond 113,000 to the inch, but it is safe to say that this is about the limit. The visibility of single ruled lines is a distinct problem, and it is proposed to substitute this as a test in place of the resolution of lines in close combination. Instead of bands of lines of the Nobert pattern, a series of bands is suggested, each having the same interlinear unit, but with the lines of each successive band finer than those of the preceding band. One mickron is a convenient interlinear unit. A heavy line should precede the band in order to facilitate finding it.

The paper was closed by showing the intimate relations between the limits of naked-eye and microscopic visibility. Lines whose width did not exceed one-sixth of a mickron have been seen by the naked eye which could not be discovered by the microscope.

The next paper was by Prof. A. H. Chester, on

DRY MOUNTING.

On account of the great difficulty in successfully mounting dry objects, namely, the deposit on the under side of the cover-glass, Prof. Chester, following out a suggestion of Prof. Rogers, has worked out the following method, which may he given in the words of the writer:

"The object is fastened to the glass slip in the usual way, and a cell built up around it by means of one or more tin rings. When the cell is high enough so that the cover-glass laid on top will not touch the object, a tin ring having a little larger hole is cemented on, thus forming a ledge on which the cover-glass may rest, with room above it for the wire ring, which holds it in so firmly that there is no danger of its being jarred out. The tin cells are made as described at the Elmira meeting last year, by punching rings from thick tinfoil and afterward stringing the rough rings on a mandril that just fits the hole, clamping them fast and turning them down until they are just the right size outside. After considerable experiment I have adopted the following sizes in the various parts of this work, using a five-eighths inch cover-glass: For the cell-rings a No. 29 punch is used, having a diameter of 0.543 of an inch. For the top rings the punch is No. 22, with a diameter of 0.505 of an inch. This cuts a little larger than its inner diameter, and will just admit the five-eighths cover-glass. For the outer rim of both a No. 11 punch may be used, 0.751 of an inch in diameter, and making the rings large enough to allow for turning down. The tinfoil for the upper ring should have a thickness of about 0.032 of an an inch. No. 21 of the Birmingham wire gauge. Made with a gun-wad punch, the rings will have a bevel on the inside, and being set with the smaller hole uppermost the bevel will help to hold the brass ring in place. The wire rings are made from No. 24 spring brass wire, 0.022 of an inch in diameter. These rings are easily made by winding a wire on a spindle about 0.4 of an inch in diameter, forming a spiral spring, every coil of which when cut open makes a ring. The exact size of this spindle is not important, for the size of the spiral can be varied by putting more or less strain on the wire, or by the rate at which the spindle is revolved. The rings should be a trifle larger than the opening in cells, so that small pieces must be cut out to make them fit exactly when sprung into place. They can then be taken out and the cover-glass removed with the greatest ease. The cover-glasses should not be more than one-hundredth of an inch thick, and several thicknesses of tinfoil may conveniently be used for the lower cells. The thinnest I use is 0.005 of an inch. For objects requiring less than that I simply turn a cement ring on the glass, and then put the top cell on that.

After the reading of this paper there was an exposition of the methods of work by many of the members of the society.

Wednesday evening Prof. W. H. Walmsey, of Philadelphia, read a paper on "Photomicrography," and exhibited his apparatus.

Prof. D. S. Kellicott, of Buffalo, followed with a valuable paper on "Parasites in the Gills of a Crayfish."

At the close of the session many of the members accepted an invitation from Prof. Hough, of the Chicago Observatory, to visit and examine the telescope.

In the next number of THE JOURNAL there will be given a report of the remaining sessions of the society.

REPORT OF THE SECRETARY OF THE SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

Section on Obstetrics and Diseases of Women met in Frohsim's Hall. Dr. J. K. Bartlett, of Wisconsin, Chairman. In absence of the Secretary, Dr. G. A. Moses, of St. Louis, Missouri, Dr. J. T. Jelks, of Hot Springs, Arkansas, was appointed Secretary. First paper, by Dr. W. H. Byford, of Chicago, on "Intra-Pelvic Inflammations of a Chronic Form," was read by the Secretary.

All parties making speeches were requested to furnish the Secretary with copies of their remarks.

Next paper was on "Post-Partum Polypoid Tumors," by Dr. H. G. Landis, of Ohio.

The paper was ably discussed by Drs. Wathier, of Kentucky, and H. O. Marcy, of Boston.

Next paper was read by Dr. H. O. Marcy, on "Restoration of the Perineum by a New Method," the doctor exhibiting the pins with which the new operation is performed. The paper was ably discussed by Drs. Brown, of Detroit, Michigan; E. W. Jenks, of Chicago; H. O. Marcy, of Massachusetts; Haws, of Detroit; Wathier, of Kentucky; Sutton, of Pittsburg; Reamy, of Ohio; Potter, of New York; and Watson, of Wisconsin.

The next paper presented to the Section was by Dr. Sutton, of Pennsylvania, on "Enterotomy as a Com-

plication in Ovariotomy or Oöphorectomy." Dr. Murdock, of Pennsylvania, discussed the paper and confirmed the statements of Dr. Sutton.

Dr. Jenks, of Chicago, moved the appointment of a committee on publication of the papers, said committee to be composed of five, of whom the Chairman and Secretary shall constitute two. After which the Section adjourned.

SECOND DAY.

Dr. Bartlett, of Wisconsin, Chairman; and J. T. Jelks, M.D., of Arkansas, Secretary.

Section on Gynæcology and Obstetrics. Session in Frohsim Hall. Second day, June 6.

Dr. E. C. Dudley asked permission to transfer reading of his paper from this P.M. to first thing to-morrow afternoon. Granted.

Dr. R. Beverly Cole, of California, being absent, and his paper on "Subinvolution, Its Causes and Treatment," not being on hand, the next paper was called, "Post-Partum Atrophy of Uterus," by J. Tabor Johnson, of District of Columbia. Dr. Johnson being absent, Dr. John Morris, of Maryland, read a paper on "What Means can be Judiciously Used to Shorten the Term and Lessen the Pains of Labor?" Paper was ably discussed by Dr. McClurg, of Pennsylvania; A. C. Grant, of Texas; Dr. Abbey F. Rooney, of Illinois; Dr. Reamy, of Ohio; Dr. Smart, of Michigan; Dr. Gordon, of Minnesota; Dr. Martin, of Massachusetts; Dr. Montgomery, of Pennsylvania; Landis, of Ohio; Humiston, Lynn, Massachusetts; Robinson, of Pennsylvania; Dr. Reeves, of Ohio; Horlic, of Ohio; Wathier, of Kentucky; and closed by Dr. Morris himself.

Paper by Dr. E. C. Dudley, of Illinois, on "The Immediate Application of Sutures in Puerperal Laceration of Cervix and Perineum," was read by the author to an attentive audience, and was discussed by Dr. Harvey, Dr. Wathier, of Kentucky; Dr. E. W. Jenks, of Chicago; Dr. Morris, of Maryland; Dr. Maughs, of Missouri; Ulrich, of Pennsylvania; Carstens, of Detroit, being closed by Dr. Dudley himself.

The next paper was read by Dr. W. H. Taylor, of Cincinnati, on "Report of a Case of Laparo-Eletrotomy." Dr. Reamy asked that discussion of Dr. Taylor's paper be set fos first thing for to-morrow afternoon, and the request was granted by the chairman.

Section then adjourned.

Committee to examine and report upon papers in addition to President and Secretary: E. W. Jenks, Illinois; H. O. Marcy, Massachusetts; R. S. Sutton, Pennsylvania.

THIRD DAY.

Third day's proceedings of Gynæcological and Obstetrical Section: First thing in order was the discussion of Dr. Taylor's paper on Laparo-Eletrotomy, and was earnestly discussed by Dr. Dunlap, of Ohio; Dr. Dandridge, of Ohio; Dr. Reamy, of Ohio; Dr. Wathier, of Kentucky, Reed, of Ohio; Dr. Bartlett, of Wisconsin, and closed by Dr. W. H. Taylor, the author of paper.

Dr. Battey being absent, and his paper on "Battey's Operation; Death from Ether," not being on hand, the President called the next. Dr. P. Zenner, of Ohio, read a paper on "Value of Gynæcological Treatment in Hysteria and Allied Affections." Discussed by Dr. Reamey, of Ohio; Dr. Gordon, of Maine; Dr. Corlett, of Missouri; Dr. Maughs, of Missouri; Dr. Crawford, of Illinois; Dr. Reed, of Ohio. The President then appointed the following committees, viz.: The committee on selection of subject for the Prize Essay: Drs. L. F. Warner, of Massachusetts; H. D. Didima, of New York, and W. H. Byford, of Illinois.

Committee of Award: J. C. Reeve, of Ohio; T. A. Reamy, of Ohio; G. M. B. Maughs, Missouri.

Dr. G. M. B. Maughs, of Missouri, then read a most remarkable paper on "The Midwifery, and Gynæcology of the Ancients."

Dr. Martin, of Boston, then read a paper on an Appliance Adapted to Synecological and Obstetrical emergencies.

Session closed *sine die*.

REVIEWS.

LESSONS IN QUALITATIVE CHEMICAL ANALYSIS. By F. Beilstein, translated and enlarged by Chas. O. Curtman. St. Louis Stationery and Book Co., Publishers.

This is a small, well printed and well proportioned book of 150 pages. It is a translation from the fifth edition of Dr. Beilstein's work. The author and editor have made it a compact manual, covering rather more ground than the leading title would indicate, for to the lessons in qualitative analysis have been added about thirty pages treating ing of volumetric analysis. The work is intended to be a laboratory guide for students who desire to gain a fair knowledge of the reactions of the common chemicals and of methods of analysis. It commences with a chapter on Chemical Manipulations, in which is described the Bunsen burner and its management, the use of the blowpipe, manipulations of glass tubing and corks, filtration, and other points in regard to which the beginner needs information. Then follow forty-five examples for practice in qualitative analysis. These consist in making tests for certain substances. For instance, in the first the reaction of common salt with heat and various chemicals is described, and also the tests for sodium and chlorine. Following these examples, and before taking up the systematic course in qualitative analysis, a few pages are devoted to the examination systematically of substances containing a single base. The way to make a qualitative analysis is clearly and at the same time compactly described. At this point the use of the spectroscope is explained.

A few examples in the analysis of organic substances, such as alcohol, sugar, quinine and morphine, are also given. Among the examples in volumetric analysis are some for the quantitative determination of glucose and urea. The book is certainly a good one for the purpose, although it would have been a

valuable addition if the analysis of some other organic substances had been added. It makes a beginning at urinalysis, and no more. While it gives methods of qualitatively and quantitatively determining sugar and urea in urine, it says nothing about the detection of albumen and some other important substances. To be sure, it does not purport to cover this ground, still the book would have been, by their addition, more valuable for those students (medical and pharmaceutical) for whom the editor has tried to especially adapt it.

REPORT OF THE HEALTH OFFICER OF THE DISTRICT OF COLUMBIA FOR THE YEAR ENDING JUNE 30, 1882.

This, the annual report of Dr. Smith Townshend, is a very carefully prepared document. The tables, wood-cuts and maps serve as excellent illustrations of the text. Of course most of the material is of local interest, but the illustrations given of defective drainage in a rapidly growing city like Washington, with the money that is now being spent upon costly private residences, must be of the first importance, and it is evident from his report that Dr. Townshend has fully appreciated this. That great bugbear, malaria, it would seem, cannot be readily treated from a statistical standpoint, as "Malarial fever does not appear as a prominent cause of death in the mortality reports. It is the malarial poison that hastens death in phthisis or consumption, retards convalescence in many other diseases, and, complicating, forms into the incurable what would otherwise be a curable disease." The population of the District of Columbia is set down at 188,653, to meet the medical wants of which there are registered as medical practitioners 426 names.

BOOKS AND PAMPHLETS RECEIVED.

Beilstein's Chemical Analysis. Translated from Fifth Edition, with Additions. By C. O. Curtman, M.D. St. Louis Stationery and Book Co., Publishers.

Anatomy, Surgery, and Hygiene of Rectum. By J. Eastman, M.D. (Reprint).

The Prevention of Insanity. By Nathan Allen, M.D. (Reprint.)

Nasal Cough and the Existence of a Sensitive Reflex Area in the Nose. By J. H. Mackenzie, M.D. (Reprint.)

Report of Health Officer of District of Columbia, March and June, 1883.

Archives de Medicine et de Pharmacie Militaires.

Bulletin de l' Academie de Medicine.

Archives de Medecine Navate.

Massage, Its Application, and A New Operating Table. By F. H. Martin, M.D. (Reprint.)

Experimental Researches on the Tension of the Vocal Bands. By F. H. Hooper, M.D. From Physiological Laboratory of Harvard Medical School.

Transactions of the Maine Medical Association for 1882.

Annual Report of the Supervising Surgeon-General of the Marine Hospital Service of the United States, 1882.

Preliminary Report on the Yellow-Fever Epidemic of 1882 in the State of Texas. Marine Hospital Service.

MEDICAL SOCIETY ITEMS.

SANITARY CONVENTION AT MUSKEGON, MICHIGAN, UNDER THE AUSPICES OF THE STATE BOARD OF HEALTH.—Arrangements having been made by a local committee of citizens of Muskegon, acting with a committee of the State Board of Health, you are cordially invited to be present at the sessions of a Sanitary Convention, which will be held in Muskegon, Michigan, on Thursday and Friday, August 23 and 24, 1883.

SESSIONS.—There will be sessions the first day at 2 P. M. and 8 P. M.; on the second day at 9 A. M., 2 P. M., and 8 P. M. At each session of the Convention there will be addresses or papers on subjects of general inierest pertaining to public health, each paper to be followed by a discussion of the subject treated.

OFFICERS OF THE CONVENTION.—The officers chosen are as follows: President, Hon. H. H. Holt; Vice-Presidents: F. A. Nims, Muskegon; K. F. Morse, Whitehall; Hon. John Roost, Holland; Dr. John Reynolds, Grand Haven; Hon. Michael Brown, Big Rapids; F. P. Kenyon, Montague; Rt. Rev. Geo. D. Gillespie, Grand Rapids; A. S. Kedzie, Grand Haven; Henry F. Thomas, M.D., Allegan; G. K. Johnson, M.D., Grand Rapids; E. O. Shaw, Newaygo; W. E. Dockry, M.D., Pentwater; Judge F. J. Russell, Hart; Frank Bracelin, Montague; Secretary, C, P. Donelson, M.D., Muskegon.

ADMISSION.—The admission to all sessions of this Convention will be free, and the public are cordially invited.

OBJECTS OF THE CONVENTION.—The objects of the Convention are the presentation of facts, the comparison of views, and the discussion of methods relating to the prevention of sickness.

ADDRESSES AND SUBJECTS TO BE PRESENTED AND DISCUSSED.—An address by the President of the Convention, Hon. H. H. Holt. Among the subjects which it is expected will be presented and discussed are the following:

The Water Supply, with especial reference to Muskegon; Sewerage and Drainage, and its application to Muskegon; Communicable Diseases,—Scarlet Fever, Diphtheria, and Small-Pox; Ventilation of Residences and Public Buildings; Food, and the Sanitary Regulation of Markets; Instruction in the Public Schools on the effects of Alcohol and Narcotics; Adulterations and Nostrums; Shall there be a General Hospital at Muskegon? The Disposal of Refuse Organic Matter.

The papers are expected to be original contributions, which when read are to be considered the property of the Convention, and to be left with the

Secretary. Programs will be issued before the Convention.

COMMITTEE FROM THE STATE BOARD OF HEALTH.—J. H. Kellogg, M.D., Battle Creek; Henry B. Baker, M.D., Lansing.

LOCAL COMMITTEE.—John P. Stoddard, M.D., Chairman; R. S. Thompson, Hon. H. H. Holt, Rev. M. W. Fairfield, Hon. Nelson DeLong, H. H. Getty, Rev, J. W. Miller, Fred. A. Nims, David McLaughlin, C. P. Donelson, M.D., Prof. C. L. Houseman, Dr. L. R. Marvin, Dr. G. Chaddock, Rev. W. T. Whitmarsh, Hon. L. G. Mason.

Reduced fare on railroads may be obtained by applying to the Secretary of the Convention for certificates. For further information address

C. P. DONELSON, M.D., *Secretary.*
Muskegon, Michigan.

THE third annual meeting of the Lehigh Valley Medical Association will be held on the 15th of this month. Among the papers to be read are address by the President, Dr. Traill Green; one on "Strangulated Hernia," by Dr. A. M. Cooper, of Point Pleasant; and one on "The Diagnosis and Treatment of Some Forms of Grass Hysteria," by Dr. C. K. Mills, of Philadelphia.

AT the third annual meeting of the Ophthalmological Society of Great Britain, which was held July 6, Mr. Jonathan Hutchinson was elected President.

MISCELLANEOUS ITEMS.

COLLEGE ITEMS.

Dr. FRANCIS DELAFIELD has been made full Professor of Principles and Practice of Medicine in the College of Physicians and Surgeons, New York.

H. N. HEINMAN, of New York city, has been made Professor of Principles and Practice of Medicine in the Woman's Medical College of the New York Infirmary.

DR. J. H. MCINTIRE, late of Richmond, Ind., has been elected to the chair of Surgical Diseases of Women, and Dr. Edw. Borck to the chair of Surgery, in the College for Medical Practitioners, St. Louis, Mo.

MR. JONATHAN HUTCHINSON, who has resigned his position in the London Hospital School as senior surgeon, has been made Emeritus Professor of Surgery. Dr. Tidy has also resigned his position as lecturer on Chemistry.

AFTER forty years of servicein the chair of chemistry, in Dartmouth Medical College, Prof. O. T. Hubbard, M.D., has resigned, and been made Emeritus professor. Dr. J. Bartlett will give instruction in chemistry during the present course of lectures.

THE University of Colorado has opened a medical department, their course of study to be four years. The Faculty, with a few exceptions, reside in Denver. Unfortunately, a provision in the State charter prevents the medical department from being established in Denver.—*Denver Med. Times.*

THE Grocers' Company, of London, England, in order to aid and stimulate investigation of sanitary science, have offered a purse of £1,000 for the best essay on the following subject: "To discover a method by which the vaccine contagium may be cultivated apart from the animal body, in some medium or media not otherwise zymotic; the method to be such that the contagium may by means of it be multiplied to an indefinite extent in successive generations, and that the product after any number of such generations shall (so far as can, within the time, be tested) prove itself of identical potency with standard vaccine lymph." The prize is open for competition by citizens of any nation. Persons desirous of ascertaining the conditions in accordance with which the essays must be written, should address Clerk of the Grocers' Company, Grocer's Hall, London, E.C.

WE learn from the Indiana *Medical Journal*, that the Medical College of Indiana has ceased to be the medical department of Butler University. Dr. John Chambers has been elected to the chair of Principles and Practice of Medicine made vacant by the death of Dr. R. N. Todd; Dr. J. W. Marsee to the chair of Anatomy and Clinical Surgery, formerly occupied by Dr. Chambers; Dr. G. L. Curtis to the chair of Physiology, vacated by the resignation of Dr. Wm. B. Fletcher; Dr. James Taylor was made Demonstrator of Anatomy, with Dr. Frank Morrison as assistant.

THE following gentlemen have been appointed by the Governor the State Board of Health of Missouri: E. H. Gregory, W. R. Conery, and P. D. Yost, of St. Louis; G. M. Cox, of Springfield; G. T. Bartlett, of Poplar Bluffs; H. F. Hereford, of Kansas City; and S. C. Hearne, of Hannibal.

The Bristol Medico-Chirurgical Journal is the title of journal to be issued July 1st, under the auspices of the Bristol Medico-Chirurgical Society, and to be edited by J. Greig Smith, M.A., F.R.S.E. It will be published half-yearly.

THE government of France has urged in the Chamber of Deputies a credit of 50,000 francs, with which to pay the expenses of a scientific commission to investigate the cholera epidemic in Egypt

IT is announced (Boston *Medical and Surgical Journal*) that Dr. Calvin Ellis has given up the deanship of Harvard Medical College, and that Dr. H. P. Bowditch has been chosen in his place.

Dr. L. H. MCMURTRY has retired from the editorship of the *Louisville Medical News*, and has been succeeded by Dr. H. A. Cottell.

THE *Chicago Medical Register* for 1883–4 has just been issued. It contains the names of 557 regular physicians.

NECROLOGICAL.

ATWOOD, FRANCIS, M.D., died in St. Paul, Minn., Aug. 5, 1882, aged 36 years. Dr. Atwood was born near Boston, Mass., and obtained his elementary education at Exeter Academy, after which he entered Harvard University, and graduated Bachelor of Arts in 1869. Then entering the medical department of the same institution he graduated Doctor of Medicine in 1872. After spending a year as interne in the wards of the eye and ear department of the Boston City Hospital he went to Europe, and in Berlin and Vienna acquired such thorough practical knowledge of his specialty as to enable him to at once take the front rank as an oculist. He settled in St. Paul in November, 1874, and in eight busy years made a brilliant reputation. Like so many workers he took no time for rest, and vainly looked to the future for the recreation and enjoyment he should have secured as he went along. This broke down his constititution, and the first real sickness of his life carried him off. W. D. HAND, M.D.

BELL, CYRUS, M.D., of Feeding Hills, Mass., died in ——— 1882; was born in Chester, June 14, 1813. He was the son of James B., and early left an orphan, but acquiring a fair education, he studied medicine with one of his brothers, for three of them were physicians. When he was sufficiently advanced he attended lectures at Berkshire Medical School, at Pittsfield, where he graduated M.D. in 1839. After practicing for a time with one of his brothers he settled at Feeding Hills, where for over forty years he was actively engaged in an extensive and responsible practice. He married Miss Chamberlain, of Austerlitz, N. Y. Dr. Bell was noted for his devotion to his profession, and for the careful and conscientious manner in which he discharged all his professional obligations. He was a generous man, a kind and skillful physician, and a steadfast friend. Doctor Bell was not only popular in the county, but was held in high esteem by his medical brethren. His standard of professional responsibility and worth was high, and the deserving always received encouragement from him, and the unworthy was as sternly frowned upon. He was a member of the County Medical Society, and of the State Medical Society, and in 1860 attended as a delegate the American Medical Association. He took an active interest in school matters, and was long a member of the committee.

J. M. T.

From data furnished by H. O. Marcy.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE, APRIL 1, 1883, TO JUNE 30, 1883.

BAILHACHE, P. H., Surgeon.—To examine officers and cadets of the Revenue Marine Service, April 2, May 28, and June 4, 1883. To proceed to New York, Y. Y., to make arrangements for the care of seamen, April 30, 1883. To proceed to Chattanooga, Memphis, St. Louis, Cairo, Evansville, Louisville, Cincinnati, Gallipolis, Wheeling and Pittsburgh, as inspector, June 23, 1883.

MILLER, T. W., Surgeon.—Detailed as President of Board of Examiners, May 15, 1883. Detailed as member of Board for the physical examination of cadets of the Revenue Marine Service, May 15, 1883.

WYMAN, Walter, Surgeon.—Detailed as member of Boards for the physical examination of officers and cadets of the Revenue Marine Service, May 1, 15 and 28, 1883. Detailed as member of Board of Examiners, May 15, 1883.

MURRAY, R. D., Surgeon.—To proceed to Pensacola, Fla., and take charge of Quarantine Service, May 21, 1883.

GASSAWAY, J. M., Surgeon.—Granted leave of absence for ten days, April 21, 1883. Detailed as recorder of Board of Examiners, May 15, 1883.

SMITH, Henry, Surgeon.—Granted leave of absence for thirty days, on account of sickness, June 14, 1883.

FISHER, J. C., Passed Ass't Surgeon.—Detailed as member of Boards for the physical examination of officers of the Revenue Marine Service, May 1 and June 4, 1883.

COOKE, H. P., Passed Ass't Surgeon.—Granted leave of absence for thirty days, May 15, 1883.

O'CONNOR, F. J., Ass't Surgeon.—Relieved from duty at Detroit, Mich., and assigned to temporary duty at Boston, Mass., May 10, 1883.

GUITERAS, JOHN, Ass't Surgeon.—Granted leave of absence for thirty days without pay, April 3, 1883.

ARMSTRONG, S. T., Ass't Surgeon.—To proceed to Memphis, Tenn., for temporary duty, May 21, 1883.

BENNETT, P. H., Ass't Surgeon.—Granted leave of absence for thirty days, on account of sickness, June 26, 1883.

AMES, R. P. M., Ass't Surgeon.—Granted leave of absence for fourteen days, April 3, 1883.

DEVAN, S. C., Ass't Surgeon.—Detailed as medical officer Revenue Steamer "Corwin," during cruise in Alaskan waters, April 16, 1883.

BEVAN, A. D., Ass't Surgeon.—To proceed to Detroit, Mich., for temporary duty, June 11, 1883.

GLENNAN, A. H. Ass't Surgeon.—To proceed to Norfolk, Va., for temporary duty, June 26, 1883.

APPOINTMENTS.

The following candidates having passed the examination required by the Regulations, were appointed Assistant Surgeons by the Secretary of the Treasury, June 6, 1883.

ARTHUR D. BEVAN, M.D., of Illinois; and ARTHUR H. GLENNAN, M. D., of the District of Columbia.